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March 17, 2011

VIA EMAIL AND OVERNIGHT DELIVERY

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Re: Standard Chlorine Chemical Co. Inc. Superfund Site

Dear Ms. Flanagan and Ms. Hess:

Please accept this letter on behalf of Thermo Fisher Scientific Inc. (Thermo Fisher) and Apogent Transition Corp. (ATC) as a supplemental response to the USEPA's CERCLA §104(e) information request relating to the Standard Chlorine Chemical Co. Inc. Site in Kearny, New Jersey (Site). This supplemental response relates to the period that The Tanatex Chemical Corporation (Tanatex) operated at the Site.

At pages 8-9 of their March 7, 2011 response to the §104(e) information request, Thermo Fisher and ATC stated regarding the end date of Tanatex operations at the Site that "both Mr. Scott and Dr. Weinstein believe that the production operations of Tanatex would have been fully transferred from Kearny to Lyndhurst by sometime in 1963." Thermo Fisher and ATC can now confirm the recollections of Mr. Scott and Dr. Weinstein through documentary evidence. Attached as Exhibit T (continuing the exhibit identification sequence used in the March 7, 2001 response) is a copy of a "Technical Bulletin from Tanatex" regarding the use of Tanatex's washing compound Tanaterge. The first page of the Technical Bulletin includes the notation:

New Address
Effective July 1, 1963
Page and Schuyler Aves.
Lyndhurst, N.J.

Accordingly, it appears that Tanatex's production operations ceased at the Site some time prior to July 1, 1963.

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Sarah Flanagan, Esq.

March 17, 2011

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Please let me know if you have any questions concerning this supplemental response.

Very truly yours,



J. Forrest Jones

Enclosure

cc: Lanny S. Kurzweil, Esq.

**CONTINUED RESPONSE OF THERMO FISHER SCIENTIFIC INC. AND APOGENT
TRANSITION CORP. TO THE USEPA'S REQUEST FOR INFORMATION
REGARDING THE STANDARD CHLORINE CHEMICAL COMPANY SITE,
KEARNY, HUDSON COUNTY, NEW JERSEY**

Thermo Fisher Scientific Inc. ("Thermo Fisher") submits this response to items 5 through 20 of the Request for Information ("Request") regarding the Standard Chlorine Chemical Company Site, Kearny, Hudson County, New Jersey (the "Site") propounded by the United States Environmental Protection Agency ("USEPA") pursuant to its purported authority under Section 104(e) of the Comprehensive Environmental Response, Compensation & Liability Act, 42 U.S.C. §§ 9601 et seq. ("CERCLA"). Thermo Fisher previously submitted a response to items 1 through 4 of the Request regarding the relationship between Thermo Fisher and The Tanatex Chemical Corporation ("Tanatex"), which ceased to exist in 1970 by reason of merger. As noted in this prior, partial response, the existing corporation that is connected to Tanatex by way of a series of mergers is Apogent Transition Corp. ("ATC"). Accordingly, this response is provided on behalf of both Thermo Fisher and ATC.

Thermo Fisher and ATC make this response (i) without admitting any liability or any issue of law or fact; (ii) without admitting that any hazardous substance was released or deposited by Thermo Fisher or ATC (or any affiliate of Thermo Fisher or ATC) at the Site; and (iii) without prejudice to any position Thermo Fisher or ATC may take in connection with the Site or any action or proceeding related to the Site in the future.

As with the prior response to items 1 through 4 of the Request, Thermo Fisher and ATC have searched the records they consider most likely to contain information responsive to the Agency's Request, and similarly have contacted those individuals considered most likely to provide such responsive information. However, Thermo Fisher and ATC cannot categorically state that they have not inadvertently overlooked some piece of information or a document that

the Agency may consider responsive in whole or in part to its Request or which may cause Thermo Fisher or ATC upon discovery of such information to supplement, modify or revise any of their responses herein. Accordingly, Thermo Fisher and ATC reserve the right to supplement, modify and revise any of their responses to the Request set forth below.

Thermo Fisher and ATC further object to the Agency's Request, Nos. 5-20, on the following grounds:

1. Thermo Fisher and ATC object to the Agency's Requests to the extent they purport to require Thermo Fisher to state or disclose information protected by the attorney-client privilege, attorney work product doctrine, the self-critical analysis privilege, and other applicable privileges, immunities or rules protecting against disclosure.

2. Thermo Fisher and ATC object to the Requests on the grounds that the various Requests are overly broad, oppressive and unduly burdensome, and are not reasonably calculated to lead to the discovery of otherwise admissible evidence.

3. Thermo Fisher and ATC object to the "Instructions" and "Definitions" contained within the Agency's Requests, to the extent that:

(a) they are vague, ambiguous, overly broad (in time and scope) and not identified with reasonable particularity;

(b) they seek information that is not within the possession, custody or control of Thermo Fisher or ATC;

(c) they seek information and documents that are unreasonably cumulative or duplicative, or may be obtained more conveniently or with less burden from other sources, or are already in the Agency's possession.

4. Thermo Fisher and ATC object to the Agency's Requests to the extent they seek

information that is not relevant to the identification, nature, and quantity of hazardous materials which have been or are generated, treated, stored, or disposed of or released at a vessel or facility related to the Site.

5. Thermo Fisher and ATC object to the Agency's Requests to the extent they seek information not related to the nature or extent of a release or threatened release of a hazardous substance, or pollutant or contaminant at a vessel or facility related to the Site.

6. The Agency request is overbroad and exceeds its Authority under CERCLA to the extent the Agency seeks a certification along with Thermo Fisher's responses.

7. Thermo Fisher and ATC object to the Agency's Request to the extent that they impose a substantial and unnecessary burden upon Thermo Fisher and ATC to assemble information, and thus are, as applied, arbitrary, capricious and unreasonable.

8. The fact that Thermo Fisher or ATC have not lodged, stated or raised a specific objection at this time to any particular numbered Request shall not be construed as a waiver or limitation of the right of Thermo Fisher or ATC to raise objections to such Requests, or to object to the use of any information gathered in response to the Agency's Request. Thermo Fisher and ATC specifically reserve the right to state additional objections.

Subject to and without waiving the foregoing, Thermo Fisher and ATC respond as follows:

REQUEST

5. Provide copies of any leases or other such agreements entered into by Tanatex with respect to the Site, including Lot 50 or other Lots comprising the Site, if any.

RESPONSE

Thermo Fisher and ATC object to this Request as outside the scope of the subject matters

of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C).

Subject to the foregoing, Thermo Fisher and ATC respond that, despite diligent investigation, they have not been able to locate documents responsive to this request.

REQUEST

6. Describe in detail the operations and processes that Tanatex conducted at the Site property. Provide copies of any documents relied upon to respond to this question.

RESPONSE

In addition to their general objections, Thermo Fisher and ATC object to this request as being overly broad and impliedly suggesting that each and every aspect of Tanatex's operations and processes entailed the release or potential release of hazardous substances. Therefore, the request is outside the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C).

Without waiving its general and specific objections, Thermo Fisher and ATC respond that they have no records in their possession directly relating to the operations of Tanatex during the relevant period. However, Thermo Fisher and ATC have diligently undertaken an investigation of the available sources of information, including reviewing published literature and other documents relating to the business of Tanatex and conducting interviews of the two principal officers of Tanatex who directed Tanatex's operations during this period -- Peter J. Scott and Sydney M. Weinstein. The following description of Tanatex's operations in Kearny, New Jersey is based on this investigation. Thermo Fisher and ATC reserve all rights to supplement and modify the following description in the event they obtain additional relevant information.

a. The business of Tanatex

The Tanatex Corporation, a New York corporation ("Tanatex NY"), was a specialty

chemical company founded in 1948 by Peter J. Scott. Scott, an "ingenieur/chimiste" who graduated from the Ecole de Chimie of the University of Lyon, France (and also studied in a graduate program at the University of Cincinnati). He rented a laboratory and pilot plant in Port Reading, New Jersey, initiating a business that would provide chemicals for the manufacture of textiles, leather, and paper. He developed, manufactured and marketed Antiox™ Gas Fading Inhibitors, Cellolube™ cationic softeners, and some surfactants. Tanatex NY outgrew the pilot plant in Port Reading and moved to rented premises in Jersey City where Plexene™ EDTA tetra sodium salt solutions were added to the product line. In 1951, Mr. Scott organized a new corporation, The Tanatex Chemical Corporation ("Tanatex"), under the laws of the State of New Jersey. Sydney M. Weinstein, who graduated from Harvard and obtained his Ph. D. in chemistry from New York University, joined Tanatex and became one of the principal stockholders.

In 1954, Tanatex outgrew its rented facilities in Jersey City and moved into a 6,400 sq. ft. building in Kearny, New Jersey that was leased from Crown Rubber Products, Inc. and/or Keaton Rubber Company for a 10-year period. The building, Mr. Scott recalls, accommodated a 400 sq. ft. laboratory, offices of the same size, and sophisticated manufacturing equipment that included a 750-gallon stainless steel pressure vessel.

As stated above, the business of Tanatex was the development, manufacture and marketing of specialty chemicals for the manufacture of textiles, leather, and paper. Tanatex's first products were essentially improvements and rationalizations of existing products ("Tanatex-improved" products). As described by Mr. Scott, in the business of producing and selling these Tanatex-improved products, "strict compliance with specifications, fast and reliable delivery and truly competitive pricing were a must. Manufacturing had to be just about perfect. There was no room for manufacturing losses of any kind."

By 1954, Tanatex had developed its first "original Tanatex" product, a carrier for dyeing polyester fiber that Tanatex marketed under the trade name Tanalon™. Tanalon allowed the dyeing of DuPont's Dacron™ in conventional equipment, an industry first. While the product found rapid acceptance, Tanatex continued its research. For this purpose, Tanatex set up an applications laboratory that duplicated dyehouse procedures. This led to the development of more effective carriers for dyeing polyester fiber.

As described by Mr. Scott, Tanatex's approach to product development "concentrated on problem solving rather than individual product improvement, which in turn resulted in a number of unique, 'top of the line' products." In 1964, Mr. Scott prepared an article describing the research-based and customer service-oriented product development and marketing approach of the company. This article was published in the American Dyestuff Reporter, a trade publication in the textile industry. A copy of this article, Scott, *Marketing Textile Chemical Specialties in the United States and in Europe*, 53 AMERICAN DYESTUFF REPORTER, No. 13, pp. 131-134 (June 22, 1964), is attached as Exhibit H.¹ As directed by its chemist-principal stockholders, Mr. Scott and Dr. Weinstein, Tanatex was a research-based company in which (during the relevant period here) approximately one-third of its employees were based in the company's laboratory.

With the development of "original Tanatex" products like Tanavol™, Carolid™ and Tanalid™ (described below), Tanatex eventually became a dominant factor in the field. According to Mr. Scott, at the time of its acquisition by Sybron Corporation (then known as Ritter Pfaudler Corporation) in 1968, "original Tanatex" products accounted for about 80% of its U.S. sales volume, and "Tanatex-improved" products accounted for the remaining 20%. All together, the Tanatex product line eventually included:

¹ Exhibits A through G were attached to Thermo Fisher's initial, partial response to the Request.

- Carriers for disperse dye polyester
- Carriers for cationic dye polyester
- Carriers for Arnel™ triacetate
- Cationic dyeing assistants
- Leveling agents
- Surfactants
- Sequestering agents
- Sodium chlorite fumes inhibitors
- Softeners for textiles and paper
- Textile lubricants

b. The premises used by Tanatex in Kearny

In 1954, Tanatex leased new premises located on Belleville Turnpike in Kearny, New Jersey from Crown Rubber Products, Inc. and/or Keaton Rubber Co. According to property records, Crown Rubber acquired the larger lot on which these premises were located (now known as Lot 50, Block 287 on the tax map of the Town of Kearny) by a deed dated December 30, 1953 from Keaton Rubber Co., which had acquired the same property on the same day from Thomas A. Edison, Incorporated ("Edison").² Accordingly, the very earliest that Tanatex could have taken possession of the Kearny premises would have been some time in 1954. Mr. Scott recalls that this lease was for a term of 10 years. The 1962 contract for the purchase and sale of Lot 50 between Keaton Rubber Co. and Standard Chlorine Chemicals Co., Inc. ("SCCC") recites

² A copy of the December 30, 1953 deed by which Keaton Rubber Co. conveyed the property to Crown Rubber Co., enclosed with the June 29, 2001 letter from Chemical Land Holdings, Inc. to the New Jersey Department of Environmental Protection, and a copy of the September 1, 1959 deed by which Crown Rubber Co. conveyed the property back to Keaton Rubber Co., obtained from the USEPA, are attached as Exhibit I.

a February 1964 termination date for a Tanatex lease.³ Accordingly, the inception date for the Tanatex lease was probably no earlier than February 1954.

The building on Lot 50 that Tanatex first leased from the rubber company was Edison's former Service and Maintenance Building (referred to as "Building 3" in environmental reports in the USEPA's files), a building approximately 80 feet by 80 feet in area (6,400 ft²).

According to Mr. Scott, the first thing that Tanatex did upon obtaining occupancy of Building 3 was to arrange for the construction of a second floor platform within the building to provide access to the tops of the reactors that Tanatex used for the formulation of its products. In addition, Tanatex had offices and a laboratory constructed that occupied about 12 ft of the northernmost width of the building. In light of this, it would have been at least several months into 1954 before Tanatex could have begun production operations in Building 3.

Several years after leasing Building 3, Tanatex leased additional space in Edison's former Engineering Building (referred to as "Building 1" in environmental reports). Tanatex used Building 1 for offices and for laboratory space. No production operations were carried out in Building 1.

Tanatex closed on the purchase of a new operating plant located in Lyndhurst, New Jersey on April 27, 1962.⁴ Just as when Tanatex first occupied the Kearny premises in 1954, a certain amount of time would have been required to modify the Lyndhurst premises to allow them to be used for Tanatex's production operations. In any event, both Mr. Scott and Dr.

³ A copy of the Rider to Contract of Sale dated September 14, 1962 between Keaton Rubber Co. and SCCC, enclosed as part of SCCC's July 21, 2008 response to the USEPA's §104(e) request, is attached as Exhibit J.

⁴ An excerpt from the 1981 contract of sale between Sybron Corporation and Diamond Chemical Co. Inc. for the sale of the Lyndhurst plant reciting that the property to be conveyed is "the same premises conveyed to The Tanatex Chemical Corporation by deed of Avon Enterprises, Inc. dated April 27, 1962" is attached as Exhibit K.

Weinstein believe that the production operations of Tanatex would have been fully transferred from Kearny to Lyndhurst by sometime in 1963. Accordingly, 1962 was likely the last full calendar year during which Tanatex's production operations were solely operated in Kearny.

c. The products made by Tanatex in Kearny

Tanatex started its Kearny operations with a product line largely consisting of the same "Tanatex-improved" products it had made in Jersey City. As described by Mr. Scott, by this time, "sales showed appreciable growth, the laboratory worked well, and sales calls presenting Tanatex products were ended with the question: 'what is the biggest problem in your operation?'" One of the customers that asked Tanatex to solve a problem was Burlington Industries, which needed a new dye carrier for a new DuPont fiber. In response, Tanatex developed its first "Original Tanatex" product, consisting of about 80% trichlorobenzene (TCB) and 20% anionic emulsifiers that was marketed under the trade name Tanalon.

According to trade mark records, Tanatex applied to register the trade name "Tanalon" on January 4, 1954 when its offices were still listed as being in Jersey City. The trademark registration stated that the trade name Tanalon was first used in commerce on June 23, 1953. Accordingly, it appears that Tanatex first began producing Tanalon before it moved to Kearny.⁵

As noted above, after the introduction of Tanalon, Tanatex continued its research to develop more effective dye carriers. It was recognized that ortho-phenylphenol (OPP) had qualities that were desirable for a dye carrier. However, OPP was very difficult to use. Tanatex eventually developed two products that incorporated OPP in a useable and cost-effective form.

"Tanavol" was an easily emulsifiable clear liquid consisting of a solution of 12 parts OPP

⁵ Copies of the trademark registrations obtained from the website of the U.S. Patent and Trademark Office pertaining to the products that Tanatex may have sold during the period of its operation in Kearny are attached as Exhibit L.

and 12 parts of biphenyl (BP) in 36 parts of TCB, plus 24 parts of emulsifiers and 16 of water.

According to trademark records, Tanatex first used the trade name Tanavol in March 1956.

By 1957, Tanatex had developed an emulsifiable OPP carrier without TCB or BP, which was sold under the trade name "Carolid." According to trademark records, Tanatex first used the trade name Carolid in May 1957. An announcement in the June 24, 1957 edition of CHEMICAL & ENGINEERING NEWS identified Carolid as a "new carrier" that simplified the dyeing of "'difficult' synthetics."⁶ Carolid was considered a major advance in the polyester textile industry and was the product for which Tanatex was most recognized during this period. Sales of Carolid and Tanavol constituted most of Tanatex's dye carrier business during the Kearny period.⁷

Although Tanatex continued to sell TCB-based dye carriers under the trade name Tanalon throughout the period of its operations in Kearny, Mr. Scott recalls that Tanalon sales were a small fraction of Tanavol sales. Dr. Weinstein also recalls that OPP soon superseded TCB as the main constituent of the dye carriers sold by Tanatex.

In summary, the principal dye carriers produced by Tanatex during the period of its operations in Kearny and their principal constituents were as follows:

Principal Tanatex Dye Carrier Products (1954-1963)

Product Name*	Principal Constituent(s)
Carolid	OPP emulsifiers
Tanalon	TCB emulsifiers
Tanavol	TCB OPP BP emulsifiers

⁶ Copies of references to Tanatex in CHEMICAL & ENGINEERING NEWS during the relevant period are attached as Exhibit M.

⁷ "Tanalid," was an emulsifiable para-phenylphenol (PP) used in the printing of polyester fiber. According to U.S. Patent and Trademark Office records, Tanatex first used the trade name Tanalid in May 1958.

According to Mr. Scott, the only source of the OPP used by Tanatex at Kearny was Dow Chemical. The only source of the BP was Monsanto. The source of the TCB was either Dow Chemical or Hooker Chemical.

According to both Mr. Scott and Dr. Weinstein, dichlorobenzene was not a constituent of any dye carrier or other product produced or sold by Tanatex during the period it operated in Kearny or anywhere else. According to USEPA literature, commercial TCB "may contain mono-, di- and tetrachlorobenzenes." However, the USEPA also notes that a "Dow Chemical information sheet states a purity of 100 percent for that company's 1,2,4-trichlorobenzene." USEPA, *Support Document, Health Effects Test Rule: Chlorinated Benzenes*, p. 33 (June 1980). Mr. Scott recalls that the TCB that Tanatex purchased was "very pure." Based on the foregoing, it appears that dichlorobenzene may have been present, if at all, in very low concentrations in any TCB that Tanatex purchased from Hooker Chemical.

Although Dr. Weinstein and Mr. Scott received a patent on a dye carrier containing methylnaphthalene, both Dr. Weinstein and Mr. Scott stated that Tanatex never produced or sold any dye carrier or any other product containing naphthalene or methyl naphthalene during the period it operated in Kearny.

A number of additional "Original Tanatex" products were developed and manufactured in Kearny. They included carriers for cationic dyeable Dacron and Arnel triacetate fiber, dye leveling agents, specialty surfactants, cationic dyeing assistants, cationic softeners for textiles and paper. All of these products were free of TCB, OPP, BP, and PP. According to Mr. Scott, "manufacturing procedures for 'Original Tanatex' products were just as strict as the ones for 'Tanatex-improved' ones."

Other products that Tanatex produced in Kearny include the following:

Principal Tanatex Products Other Than Dye Carriers (1954-1963)⁸

Product Name	Principal Constituent(s)	Product Use (per trademark registration)
Cellolube	tertiary amines	Textile softeners
Chemocarrier KD5W	esters	Compounds used in the fixation of coloring matters upon fibers*
Merse	fatty amino acids	Compounds instrumental in cleaning textile fabrics and processing machines*
Plexene	ethylenediamine tetraacetic acid (EDTA) synthesized from: ethylenediamine formaldehyde sodium cyanide	Sequestering agents
Tanalube	amides	Textile softeners and textile lubricants
Tanapal	phosphate derivative	Dispersing agents, leveling agents, dyeing assistants, emulsifying agents and assistants, textile lubricants and wetting agents*
Tanapon	anionic amides synthesized from: refined vegetable oil diethanolamine catalyst	Non-foaming surfactants; agents for leveling, softening, wetting, bleaching, carbonizing, dispersing, emulsifying and kier-boiling; dyeing assistants and crabbing assistants*
Tanaterge	fatty amino acids	Detergents and washing compounds
X-Tan	sodium nitrate and powdered surfactant	Bleaching assistants and stripping agents for textile fibers*

* Application of trademark registration filed after Tanatex ceased operations in Kearny.

It should be noted that the trademark registrations for these trade names cover product groups that are chemically similar. Individual products carry the group trade name followed by identifying characters. For example, Mr. Scott recalls that Plexene was an ethylene diamine tetraacetic acid tetra sodium salt solution (EDTA/Na4) while Plexene D was an ED diacetic acid disodium salt solution (EDDA/Na2.)

It should also be noted that the trade names identified above continued in use by Tanatex

⁸ On April 23, 1963, Tanatex entered into an agreement by which certain rights to the products that it had developed were sold to Tanatex Chemical (Holland) N.V., Ede, The Netherlands with respect to the territory of Europe and the British Isles. Attached to that agreement was a schedule of Tanatex products that were the subject of the sale and purchase. (A copy of this agreement is attached as Exhibit N.) This list covers all the products developed by Tanatex since its inception, and is more extensive than the list set forth below which covers only the major products Tanatex produced and sold during its Kearny period.

and others after Tanatex was no longer located in Kearny. Some are still in use today.

According to Mr. Scott, one of the rules that Tanatex lived by was to never alter a formulation without altering the name. For example, a product like Tanavol was considered a "commodity," with a trade name that had a specific meaning throughout the entire world. However, after ownership of these trade names passed into other hands, these trade names may have been applied to products composed of entirely different materials than those sold under these trade names during the relevant period. Accordingly, more recent literature describing products with the trade names used by Tanatex during the relevant period does not necessarily reflect the composition of products sold by Tanatex during that period.

The tables set forth above identify the principal products that Tanatex produced or sold in appreciable commercial quantities during the period of its operations in Kearny. The key point is that Tanatex did not use dichlorobenzene -- the predominant chlorinated substance present in the soil and groundwater of Lot 50 -- as a constituent of any of its products made in Kearny or anywhere else. As noted by Mr. Scott, "the molecule was simply useless in any of the many processes Tanatex worked with."

d. The production operations of Tanatex in Kearny

Tanatex conducted production operations in Kearny with a relatively small workforce that was closely supervised and directed by the principal shareholders of the company -- Mr. Scott and Dr. Weinstein. There were also competent plant, laboratory and office managers that maintained a daily presence in their respective areas of Building 3 (and eventually Building 1). Mr. Scott roughly estimates that in 1954 when it began operations in Kearny, Tanatex had (in addition to the two managers / principal shareholders) one employee in its office, three employees in the laboratory and six employees in plant manufacturing operations. Mr. Scott was

the sole salesman. According to a profit and loss statement prepared for the fiscal year ending April 30, 1963,⁹ its last full year in Kearny, Tanatex had 40 employees:

Manufacturing/Shipping -- 13 (2 supervisors)

Laboratories -- 10 (5 chemists)

Sales -- 5 (all former head dyers)

Office -- 10 (1 office manager, 1 sales manager, 2 bookkeepers)

Officers -- 2 (both chemists)

Except for the chemist/product manager, Tanatex's sales personnel were not based in Kearny.

Tanatex operated in a very efficient manner. In part due to space limitations, Tanatex maintained a low raw materials inventory, which it quickly converted into finished products that were shipped to customers directly or to a commercial warehouse in North Carolina. Emptied raw materials drums were picked up by a drum provider who reconditioned them in his facility and delivered them back. Some drums could be, and were, re-used after just re-painting the cover.

As described by Mr. Scott, "Tanatex's manufacturing procedures avoided any and all spillage. Tanatex-improved products had the lowest possible profit margins. Original Tanatex products had to meet rigid specifications. There was just no room for any sloppiness." Any significant spillage would have threatened the viability of Tanatex. In fact, Mr. Scott has no recollection of any specific event resulting in spillage of material in Kearny and notes that Tanatex had no need to account for spillage or other loss of product in order to reconcile its inventory records with its purchases and sales.

Mr. Scott describes Tanatex's production operations in Kearny as follows:

⁹ A copy of Tanatex's profit and loss statement for the fiscal year 1963 is attached as Exhibit O. ATC did not obtain a Tanatex financial statement for any other year of its operations in Kearny.

Liquid raw materials came in 55-gallon steel drums, solid materials in somewhat smaller fiber drums or in 50-lb paper bags. They were palletized, four drums or 40 bags to a pallet and stored inside, three or four pallets high. When the Keaton Rubber Co. railroad siding became available in 1957, melted OPP was received in 8,000 gallon tank cars that were unloaded into 55 gallon lined steel drums that then were palletized and stored separately as they had to be remelted before use.¹⁰

Tanatex's manufacturing process followed a tightly controlled, set pattern. A lift truck would move 4-drum or 40-bag pallets of the required raw materials from the storage area to the "second floor/platform." There, drums provided with spigots were placed on a scale and the proper amount emptied directly into the designated processing vessel. Weights of drums were recorded both before or after removing material, and if the formula called for 929 lbs of X, 929 lbs of X was loaded into the processing vessel. Only water was metered in. All products required mixing; some required heating and cooling, some others vacuum or high pressure. No purification process was needed, no filtration, centrifuges, distillation, etc.; nothing was done that would create liquid or solid wastes that had to be disposed of.

With the exception of X-Tan, a mix of powders, all the Tanatex products made in Kearny were liquids when they were filled into their shipping containers. These were 55-gallon steel drums for products that stayed liquid, 55-gallon lined open-head steel or somewhat smaller fiber drums for liquids that solidified into pastes or gels when they cooled down.

A weighed shipping container on a scale directly under the processing vessel was filled with the standard amount of the finished product. Again, if that amount was 450 lbs, 450 lbs was run into the drum. Discrepancies were noted. The container was sealed and set aside. The operation was repeated until the vessel was empty. The last drum, of course, had less than 450 lbs because "exactly 100%" yields do not happen. Also, about 40 lbs of even a relatively "thin" liquid cling to the wall of the 10 drum stainless steel vessel. Whenever possible this "coating" was squeegeed into the last, incomplete drum which, in turn, would be added to the next finished batch of the product.

In summary, the handling of the various chemicals used by Tanatex in Kearny avoided waste and spills (and accidents) in an exemplary manner.

The EDTA and fatty amino acids manufacturing process produced a moderate amount of ammonia that was discharged in the atmosphere. It created no liquid or solid waste that required disposal. The manufacturing processes for all other Tanatex products made in Kearny created no byproducts that had to be disposed of.

As described above, the production operations that Tanatex used in Kearny did not create any by-products that became solid or liquid wastes requiring disposal and presented no known

¹⁰Dr. Weinstein and Mr. Scott have no recollection of TCB being received in tank cars in Kearny.

opportunities for product spillage, particularly to any area outside Building 3.

REQUEST

7. Provide a list of chemicals, including hazardous substances, hazardous wastes and industrial waste materials, used, stored, generated or handled at the Site during the entire time that Tanatex operated at the Site. Describe the use of each of the chemicals identified, estimate quantities used on an annual basis and provide the sources of these chemicals at that time. Provide copies of any documents used to prepare the list.

RESPONSE

a. Chemicals that Tanatex used, stored, generated or handled at the Site

In addition to their general objections, Thermo Fisher and ATC object to this request as being overly broad and impermissibly beyond the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C) to the extent it seeks information about chemicals that may not constitute hazardous substances. Without waiving their general or specific objections, Thermo Fisher and ATC respond by referring to their response to Request 6. In short, based on the diligent investigation of Thermo Fisher and ATC, they identify the following chemicals as among those that Tanatex used, stored, generated or handled at the Site:

Partial listing of chemicals Tanatex used at the Site
amides
anionic amides
Biphenyl
diethanolamine
emulsifiers
esters
ethylenediamine
ethylenediamine tetraacetic acid (EDTA)
fatty amino acids
formaldehyde
ortho-phenylphenol
para-phenylphenol
phosphate derivative

Partial listing of chemicals Tanatex used at the Site
powdered surfactant
refined vegetable oil
sodium cyanide
sodium nitrate
TCB
tertiary amines

These materials were used to produce the products identified at section (c) of the response to Request 6, above.

The source of the phenylphenol used by Tanatex at Kearny was Dow Chemical. The source of the BP was Monsanto. The source of the TCB was either Dow Chemical or Hooker Chemical.

In addition, as described in response to Request 6, the process used by Tanatex to produce EDTA produced ammonia as a by-product. This ammonia dissipated in the air and did not result in any solid or liquid waste requiring disposal.

See the documents identified in response to Request 6.

b. Estimated quantities of chemicals used by Tanatex in Kearny

At the time that it leased premises in Kearny, Tanatex had become, in the words of Mr. Scott, "a sound, albeit very small enterprise." Tanatex was able to build a plant that produced high quality, competitive products with only approximately six production workers at the beginning of its period in Kearny and only eleven production workers at the end of this period. Tanatex experienced sustained growth over the entire period it operated in Kearny. This growth gained additional impetus from its development of carriers for the dyeing of then still experimental Dacron fiber. As a result, Tanatex's product mix changed from competitive

Tanatex-improved products to innovative Original Tanatex products, ultimately leading to Tanatex's purchase of a new facility in Lyndhurst in April 1962.

ATC is not in possession of records directly reflecting the quantities of chemicals used by Tanatex at its Kearny plant. However, reasonable, conservative estimates of the amounts of certain chemicals used by Tanatex in Kearny for the production of dye carriers can be calculated based on historical Tanatex sales data and other information for the period after Tanatex began producing Tanalon, Carolid and Tanavol brand dye carriers. Set forth below are the steps undertaken to calculate these estimates. ATC reserves the right to revise these estimates based on additional information. In addition, because these estimates are based on a number of conservative simplifying assumptions, ATC reserves the right to revise this estimation methodology to eliminate any overestimation of chemical usage.

According to Mr. Scott, the average price of Tanatex products during the late-1950's and early 1960's was approximately \$0.38/pound.¹¹ This means that each \$1,000 in Tanatex product sales would represent 2,632 lbs. of Tanatex products. Mr. Scott estimates that approximately 40% of Tanatex's production (by weight) was of dye carrier products. He further estimates that production of Carolid and Tanavol was roughly equal and that production of Tanalon was approximately 10% of the production of Tanavol. Based on this, he believes production of dye carriers was approximately divided between Carolid (48%), Tanavol (47%) and Tanalon (5%).

Based on these estimates by Mr. Scott, each \$1,000 in Tanatex product sales would

¹¹ An article written by Mr. Scott and published in the May 5, 1958 edition of American Dyestuff Reporter identifies the prices of Carolid and Tanavol as \$0.59/pound and \$0.47/pound, respectively, as of March 25, 1957. (A copy of this article, Scott, *Evaluation of Carriers for Dacron Dyeing*, 47 AMERICAN DYESTUFF REPORTER, No. 9, pp. 303-308 (Mar. 25, 1958), is attached as Exhibit P.) However, according to Mr. Scott, the prices of Tanatex's non-dye carrier products were lower. In the event that the average price of Tanatex products was actually more than \$0.38/pound, the estimation method set forth below would over estimate Tanatex's chemical usage.

represent the sale of approximately 1,053 lbs of dye carriers (2,632 lbs x 40%), divided among 505 lbs. of Carolid, 495 lbs. of Tanavol and 53 lbs. of Tanalon.

During the relevant period, Carolid was composed of 56% OPP and 44% emulsifier and water. Tanavol was composed of 36% TCB, 12% OPP, 12% BP and 40% emulsifier and water. Tanalon was composed of 80% TCB and 20% anionic emulsifiers. Accordingly, each \$1,000 of Tanatex sales represented usage of the following amounts of OPP, TCB and BP:

	O-PHENYLPHENOL		TRICHLOROBENZENE		BIPHENYL	
	Percent	Weight	Percent	Weight	Percent	Weight
Carolid (505 lbs):	56%	283 lbs	--	--	--	--
Tanavol (495 lbs):	12%	59 lbs	36%	178 lbs.	12%	59 lbs.
Tanalon (53 lbs):	--	--	80%	42	--	--
Total/\$1,000 sales:		342 lbs		220 lbs.		59 lbs.

With these values of chemical usage (lbs.) per \$1,000 of net sales, it is possible to estimate Tanatex's usage of OPP, TCB and BP during most of the relevant period based on Tanatex's net sales.

When Ritter Pfaudler Corporation was evaluating the possible purchase of Tanatex in 1968, it obtained information from Tanatex regarding the amounts of its net sales dating back to 1959.¹² As set forth on a table appended to this analysis, the net sales of Tanatex from 1959 to 1963 (the probable last partial year of Tanatex operations in Kearny) were as follows:

Tanatex Net sales (1959-63)	
Year	Net Sales (000s)
1959	\$1,128
1960	1,205
1961	1,179
1962	1,577
1963	1,746*

¹² A copy of the April 23, 1968 written report setting forth this analysis is attached as Exhibit Q.

*The amount of Tanatex's net sales for 1963 has been reduced by \$20,000 to net out 75,000 guilden received by Tanatex in that year for the sale of rights to Tanatex Holland pursuant to the parties' April 23, 1963 agreement. In 1963, the guilder was valued at 3.62 guilden to the U.S. dollar. www.websters-online-dictionary.org (definition of Dutch guilden). The receipt of this payment does not reflect sales of products that were made in Kearny.

The increase in net sales from \$1,128,000 in 1959 to \$1,577,000 in 1962 (the probable last full year of Tanatex operations in Kearny) constitutes an annual growth rate of 11.82%. This growth rate can be used to conservatively estimate the upper-bound of Tanatex's probable net sales in prior years of operation.

Based on the information set forth above, it is possible to reasonably estimate Tanatex's OPP, TCB and BP usage for the period from 1957 to 1963, as follows:

Estimated Tanatex Dye Carrier-Related Chemical Usage in Kearny (1957-1963)

Year	Net Sales*	o-phenylphenol** (342 lbs/\$1,000)	Trichlorobenzene** (220 lbs/\$1,000)	Biphenyl** (59 lbs/\$1,000)
1957	\$903	309	199	53
1958	1,009	345	222	60
1959	1,128	386	248	67
1960	1,205	412	265	71
1961	1,179	403	259	70
1962	1,577	539	347	93
1963	1,746	597	384	103

*in \$ 000s.

**in 000s lbs.

◇ Nets sales in 1957 and 1958 were estimated by extrapolating backwards from the 1959 net sales amount based on the 11.82% annual growth rate in Tanatex product sales between 1959-1963.

The estimation of Tanatex's OPP, TCB and BP usage for periods prior to 1957 would be more complex because Tanatex announced the introduction of Carolid in 1957.

Although the estimates set forth above are based on a number of simplifying assumptions and may not reflect variations that occurred in any one year of operation, ATC believes these represent reasonable, upper bound estimates of Tanatex's overall OPP, TCB and BP usage over the entire period 1957-1963 in Kearny. Nevertheless, ATC reserves the right to modify these estimates based on additional information or to rectify simplifying assumptions that may result in

the over-estimation of the amount of chemical usage by Tanatex in Kearny. In any event, because the operations of Tanatex did not produce chemical-containing waste and did not present any known opportunities for release of chemicals into the environment and because Tanatex never used dichlorobenzene (the principal chlorinated compound within the soil and groundwater of Lot 50), the amount of chemicals used by Tanatex has no relationship to the present environmental conditions on the Site.

REQUEST

8. Specify the locations at which the hazardous substances, hazardous wastes or industrial waste materials used, stored, generated or handled at the Site by Tanatex were disposed of. Include in your response the dates of disposal; condition of material being disposed of (e.g., solid, liquid, or sludge); and whether materials were containerized. Provide any documentation related to waste disposals such as bills of lading and manifests.

RESPONSE

In addition to their general objections, Thermo Fisher and ATC object to this request as being overly broad and impermissibly beyond the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C) to the extent it seeks information about "industrial waste materials" that may not contain hazardous substances. Without waiving their general or specific objections, Thermo Fisher and ATC respond by reference to their response to Request 6.

As noted above, Tanatex's production operations in Kearny did not create wastes requiring disposal. Of course, Tanatex would have generated ordinary, non-hazardous trash similar to any commercial enterprise. This trash would have contained materials such as waste paper and shipping containers. Mr. Scott has no recollection of how this material was removed from the Kearny premises. It is likely that this trash was removed for off-site disposal by a third-party contractor. Tanatex did not conduct any on-site disposal of such wastes.

Thermo Fisher and ATC have no documentation, such as bills of lading, relating to disposal of any type of waste associated with its operations at the Kearny Site.

REQUEST

9. For process waste waters generated at the Site, provide the following information:
- a) Where was the waste water discharged and during what years?
 - b) If any waste waters were discharged into a sanitary sewer during what years did these discharges occur?
 - c) If any waste waters were not discharged to the sanitary sewer, where were they discharged or disposed of, and during what years?
 - d) Describe any treatment of waste waters prior to being discharged to the sanitary sewer, or elsewhere, or otherwise disposed of. Please be specific.
 - e) Please provide the results of any analyses performed on any waste process streams generated at the facility.

RESPONSE

In addition to their general objections, Thermo Fisher and ATC object to this request as being overly broad and impermissibly beyond the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C) to the extent it seeks information about "process waste waters" that may not contain hazardous substances. Without waiving their general or specific objections, Thermo Fisher and ATC respond by reference to their response to Request 6. As noted above, Tanatex did not create any process waste waters in connection with its operations at the Site. Accordingly, process waste waters associated with Tanatex's operations on the Kearny Site were not discharged to sanitary sewers or to other disposal conveyances, were not treated and were not analyzed.

REQUEST

10. For floor drains or other disposal drains at buildings in which Tanatex operated:
- a) Did the drains connect to a sanitary sewer and if so, during what years?
 - b) If the floor drains or other disposal drains at Tanatex's location did not discharge to the sanitary sewer, where did they discharge and during what years?
 - c) Did any storm sewers, catch basins or lagoons exist at any time at the location and if so, during what years?
 - i) Were the catch basins or lagoons lined or un-lined?
 - ii) What was stored in the lagoons?
 - iii) What was the ultimate discharge point for the storm sewers, catch basins or lagoons?

- iv) During what years was Tanatex discharging from any of these structures')
- v) Were these discharges treated before release and if so, how and during what years?
- vi) What was the chemical composition of any waste waters discharged from any of these structures?
- d) Provide diagrams of any waste water collection, transport, storage, treatment or disposal systems on the property.

RESPONSE

Without waiving their general and specific objections therein, Thermo Fisher and ATC refer to their responses to Request 6. Mr. Scott recalls that Building 3 had floor drains. Thermo Fisher and ATC do not have any information to indicate that the floor drains in Building 3 connected to a sanitary sewer line connecting to a publicly owned waste water treatment works. No waters entered the floor drains except for incidental wash water associated with periodic floor cleanings. Presumably these floor drains were connected to the septic tanks associated with Building 3.

The engineering drawings prepared in connection with the original construction of the buildings on the property by Edison depict septic tanks servicing Buildings 1 and 3.¹³ These septic tanks presumably remained in use during the period that Tanatex occupied its premises in Kearny. Mr. Scott has no recollection of the method by which waste was removed from the septic tanks associated with Buildings 1 and 3. It is likely that this waste was removed for off-site disposal by a third-party contractor.

Thermo Fisher and ATC have no information concerning any storm sewers or catch basins in the vicinity of Buildings 1 or 3.

Because the process operations conducted by Tanatex on the Site did not create waste

¹³ A copy of engineering drawing No. 106, Plumbing-Yard Connection, Manufacturing Plant, Thomas A. Edison prepared by The Austin Company dated July 12, 1929, provided by the USEPA, is attached as Exhibit R.

waters, there would have been no need for Tanatex to utilize any lagoons in connection with its operations and Tanatex did not do so.

Except for the Edison engineering drawings identified above (received from the USEPA), Thermo Fisher and ATC have no diagrams of any waste water collection, transport, storage, treatment or disposal systems on Lot 50 of the Site. Additional information concerning the waste water collection, transport, storage, treatment or disposal systems on the Site may be found among the environmental reports and other submissions to the USEPA concerning the Site.

REQUEST

11. Identify any industrial waste materials that were disposed of in or discharged to the Hackensack River, including its tributaries. Estimate the amount of the industrial waste materials disposed of in or discharged to the Hackensack River including its tributaries and the frequency with which this disposal or discharge occurred. Also please include the results of any samples collected from the Hackensack River after any discharge or disposal.

RESPONSE

In addition to their general objections, Thermo Fisher and ATC object to this Request to the extent it seeks information regarding operations other than those of Tanatex. Thermo Fisher and ATC note that the environmental reports and other documents in the possession of the USEPA contain information concerning these operations and refer the USEPA to these reports and other documents. Thermo Fisher and ATC also object to this request as being overly broad and impermissibly beyond the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C) to the extent it seeks information about "industrial waste materials" that may not contain hazardous substances. Without waiving their general or specific objections, Thermo Fisher and ATC respond by reference to their responses to Request 6. Because the process operations conducted by Tanatex on the Site did not create waste waters, Tanatex had no need to dispose of waste materials to the Hackensack River and did not do so.

REQUEST

12. Identify any leaks, spills, explosions, fires or other incidents of accidental discharges that occurred at the Site location as a result of which any hazardous substances, hazardous wastes and industrial waste materials were released on the property into the waste water or storm drainage system at the facility or to the Hackensack River including its tributaries. Provide any documents or information relating to these incidents, including the ultimate disposal of any contaminated materials.

RESPONSE

Thermo Fisher and ATC object to this Request to the extent it seeks information regarding operations other than those of Tanatex. Thermo Fisher and ATC note that the environmental reports and other documents in the possession of the USEPA contain information concerning these operations and refer the USEPA to these reports and other documents. Thermo Fisher and ATC also object to this request as being overly broad and impermissibly beyond the scope of 42 U.S.C. §9604(e)(2)(A), (B) or (C) to the extent it seeks information about "industrial waste materials" that may not contain hazardous substances. Without waiving their general or specific objections, Thermo Fisher and ATC refer to their response to Request 6. ATC and Thermo Fisher have no information regarding any leaks, spills, explosions, fires or other incidents of accidental discharges in connection with the operations of Tanatex at the Site that resulted in a release of hazardous substances, hazardous wastes or industrial waste materials at the Site. Mr. Scott has no recollection of any specific event resulting in spillage of material in Kearny.

REQUEST

13. Was the Site ever subject to flooding? If so, provide the date and duration of each flood event. Was the flooding due to:

- a) overflow from sanitary or storm sewer back-up, and/or
- b) flood overflow from the Hackensack River?

RESPONSE

Thermo Fisher and ATC have no information to indicate whether or not the Site ever flooded. Mr. Scott has no recollection of a flood impacting Tanatex's operations in Building 1 or

3 during the period of its operations on the Site.

REQUEST

14. Describe any civil, criminal or administrative proceedings against Tanatex for violations of any local, State or federal laws or regulations relating to water pollution or hazardous waste generation, storage, transport or disposal. Provide copies of all pleadings and depositions or other testimony given in these proceedings.

RESPONSE

Thermo Fisher and ATC object to this Request as outside the scope of the subject matters of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C).

Without waiving their general and specific objections, Thermo Fisher and ATC respond that they have no record of any proceedings against Tanatex for violation of any environmental laws relating to its operations at the Site. According to Mr. Scott, no such proceedings were instituted against Tanatex.

REQUEST

15. Provide the names and addresses of any entities other than Tanatex of which you are aware that may have released or disposed of any material at the Site. Include in your response a description of the types of waste and the dates of disposal.

RESPONSE

Thermo Fisher and ATC object to this Request as outside the scope of the subject matters of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C).

Without waiving their general and specific objections, Thermo Fisher and ATC respond that Mr. Scott recalls that a rubber company that operated on Lot 50 during the period of Tanatex's operations on the Site had a practice of burning rubber in the northwest corner of Lot 50. This disposal activity occurred at some time during the period 1954 to 1962. During this period, Lot 50 was owned by Crown Rubber Co. (1953-59) and later by Keaton Rubber Co. (1959-62).

Except as set forth above, Thermo Fisher and ATC have no information concerning the

identities of entities that may have released or disposed of material at the Site, except to the extent such information was obtained through review of the environmental reports and other submissions by various parties to the USEPA with respect to the Site. Thermo Fisher and ATC refer the USEPA to these reports and other submissions.

REQUEST

16. Identify all persons who arranged for and managed the processing, treatment, storage and disposal of industrial waste or any materials containing hazardous substances at the Site.

RESPONSE

Thermo Fisher and ATC object to this Request as outside the scope of the subject matters of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C), including to the extent it seeks information about "industrial waste" that may not contain hazardous substances.

Thermo Fisher and ATC also object to this Request to the extent it seeks information regarding operations other than those of Tanatex. Thermo Fisher and ATC note that the environmental reports and other documents in the possession of the USEPA contain information concerning these operations and refer the USEPA to these reports and other documents.

Thermo Fisher and ATC additionally object to this Request as calling for a legal conclusion to the extent it requests information concerning persons who "arranged for" treatment and disposal of hazardous substances, a term that has a legal significance pursuant to 42 U.S.C. §9607(a)(3).

Without waiving their general or specific objections, Thermo Fisher and ATC respond that, as described above in response to Request 6, Tanatex's production operations in Kearny did not create industrial wastes requiring treatment or disposal. Accordingly, no management of industrial waste materials was required in connection with Tanatex's operations at the Kearny site. With respect to the ordinary trash generated by Tanatex and/or the material drained to the septic tanks associated with Buildings 1 and 3, some management may have been provided by

Jacob Hauser, formerly of Monsey, NY, a former Tanatex plant superintendent (now deceased).

REQUEST

17. If any of the documents solicited in this Request for Information are no longer available please indicate the reason why they are no longer available. Please also provide:

a) the Company's document retention policy

b) a description of the type of information that would have been contained in the documents:

c) the name, job title and most current address of the person(s) who would have produced these documents, the person(s) who would have been responsible for the retention of these documents; the person(s) who would have been responsible for the destruction of these documents; and the person(s) who had and/or still may have the originals or copies of these documents.

d) the names and most current address of any person(s) who may possess documents relevant to this inquiry.

RESPONSE

Documents would have been maintained in the ordinary course of business by Tanatex (and subsequently by Sybron Corporation) relating to the operations of Tanatex at the Kearny plant. In all likelihood, these documents (if still in existence) were transferred when Sybron Corporation sold the Sybron Chemical Group to a corporation subsequently known as (or the predecessor to a corporation known as) Sybron Chemicals Inc. (now known as Lanxess Sybron Chemicals Inc.). The specific subject matters and authors of these documents are unknown. A copy of Thermo Fisher's Records Management Policy (as amended, Sept. 1, 2010) is attached as Exhibit S. This policy is applicable to all of Thermo Fisher's direct and indirect subsidiaries, including ATC.

REQUEST

18. Please provide copies of all insurance policies and indemnification agreements held or entered into by the Company under which the Company might obtain coverage or indemnification for any liability that the Company may be found to have under CERCLA for releases and threatened releases of hazardous substances, pollutants or contaminants at and from the Site. In response to this Question, please provide not only those insurance policies and agreements which currently are in effect, but also those which were in effect during the entire period of the Company's ownership or operation of the Site. For any policy that you cannot

locate or obtain provide the name of the carrier, years in effect, nature and extent of coverage, and any other information you have.

RESPONSE

Thermo Fisher and ATC object to this request to the extent it seeks copies of all insurance policies and identification of all insurance policies above the primary coverage layer as overly broad, oppressive, unduly burdensome and not reasonably calculated to lead to the discovery of otherwise admissible evidence.

Without waiving their general or specific objections, Thermo Fisher and ATC respond that, as Thermo Fisher previously indicated in its January 31, 2011 partial response to USEPA's 104(e) information request, there may be assumption and/or indemnification obligations relevant to any potential liability for the Site. Thermo Fisher and ATC continue to search for documents related to the 1987 sale of the Sybron Chemical Group to the predecessor of Lanxess Sybron Chemicals Inc. and reserve their right to supplement or amend its response based on the outcome of this investigation.

With respect to insurance, Thermo Fisher and ATC have identified the following primary policies that might provide defense and indemnity coverage with respect to liability, if any, for releases and threatened releases of hazardous substances, pollutants or contaminants at and from the Site, which liability Thermo Fisher and ATC currently dispute.

Insurer	Policy Number	Policy Start Date	Policy End Date
United States Casualty Company	CC333473	6/1/52	6/1/53
United States Casualty Company	CGL365496	6/1/53	6/1/54
United States Casualty Company	CGL369421	6/1/54	6/1/55
United States Casualty Company	CGL683739	6/1/55	6/1/56
United States Casualty Company	CGL807700	6/1/56	6/1/57
United States Casualty Company	CGL813669	6/1/57	6/1/58
United States Casualty Company	CGL814892	6/1/58	6/1/59
United States Casualty Company	CGL818222	6/1/59	1/1/60
United States Casualty Company	CGL818751	1/1/60	1/1/61

Insurer	Policy Number	Policy Start Date	Policy End Date
United States Casualty Company	CGL 821580	1/1/61	1/1/62
United States Casualty Company	CGL 823197	1/1/62	1/1/63
United States Casualty Company	CC795905	1/1/63	1/1/64
United States Casualty Company	CC 795955	1/1/64	1/1/65
United States Casualty Company	CC 798822	1/1/65	1/1/66
United States Casualty Company	CAG 04-85-07	1/1/66	1/1/67
Security Insurance Co. of Hartford	GLA 46 20 82	1/1/67	1/1/68
Security Insurance Co. of Hartford	GLA 49 96 51	1/1/68	1/1/69
Security Insurance Co. of Hartford	GLA 52 52 95	1/1/69	1/1/70
Security Insurance Co. of Hartford	GLA 57 17 74	1/1/70	1/1/71
Security Insurance Co. of Hartford	GLA 59 98 47	1/1/71	2/1/71
American Mutual Liability Ins. Co.	BLPA869550-03-1B	2/1/71	1/1/72
Hartford Accident & Indemnity Co.	03C 802058	1/1/72	1/1/75
Hartford Accident & Indemnity Co.	03C C14600E	1/1/72	1/1/73
Hartford Accident & Indemnity Co.	03C C14601E	1/1/73	1/1/74
Hartford Accident & Indemnity Co.	03C C14621E	1/1/74	1/1/75
Hartford Accident & Indemnity Co.	03C C14635E	1/1/75	1/1/76
Hartford Accident & Indemnity Co.	03C C14645E	1/1/76	1/1/77
Hartford Accident & Indemnity Co.	03C C14656E	1/1/77	1/1/78
Hartford Accident & Indemnity Co.	03C C14676E	1/1/78	1/1/79
Hartford Accident & Indemnity Co.	03 CSE C14680E	1/1/79	1/1/80
Hartford Accident & Indemnity Co.	03 CSE 14690E	1/1/80	1/1/81
Hartford Accident & Indemnity Co.	03 CSE J13900E	1/1/81	1/1/82
Hartford Accident & Indemnity Co.	03 CSE J13906	1/1/82	1/1/83
Hartford Accident & Indemnity Co.	03 CSE J13912E	1/1/83	1/1/84
Hartford Accident & Indemnity Co.	03 CSE J13919E	1/1/84	1/1/85
Hartford Accident & Indemnity Co.	03 CLR P16723E	1/1/85	1/1/86
Hartford Accident & Indemnity Co.	01 CLR P16734	1/1/86	1/1/87

This policy list is not meant to be exhaustive and Thermo Fisher and ATC reserve the right to supplement and amend the list as their investigation continues, including the right to include other potentially applicable policies.

Thermo Fisher and ATC further respond that Mr. Scott recalls that Tanatex secured insurance coverage during the period that it operated in Kearny. In this regard, the Tanatex Profit and Loss Statement for the fiscal year ending April 30, 1963 (Exhibit O) identifies an insurance expense of \$13,300. At present, Thermo Fisher and ATC do not have copies of these

policies or any information concerning the names of Tanatex's insurance carriers. If such coverage can be confirmed, it may provide additional defense and indemnity coverage with respect to liability, if any, for releases and threatened releases of hazardous substances, pollutants or contaminants at and from the Site, which liability Thermo Fisher and ATC currently dispute.

REQUEST

19. State the name, title, and address of each individual who assisted or was consulted in the preparation of the response to this "Request for Information" and specify the questions to which each person assisted in responding.

RESPONSE

Thermo Fisher and ATC object to this Request as outside the scope of the subject matters of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C).

Subject to the foregoing, the individuals who assisted Thermo Fisher and ATC in the preparation of the response to this Request are as follows:

Peter J. Scott
111 River Birch Lane
Dalton, MA 01226

- and -

Sidney M. Weinstein, Ph.D.
2660 S Ocean Blvd APT 604N
Palm Beach, FL 33480-6801

Mr. Scott assisted with responses to Request items: 6, 7, 8, 9, 10, 11, 12, 13, 14 and 15.

Dr. Weinstein assisted with responses to Request items: 6 and 7.

In addition, Thermo Fisher personnel and outside counsel assisted with the search for and collection of information for the preparation of the responses to the Request.

REQUEST

20. Identify all individuals (other than those identified in your response to Question 19) who may have information or documents relating to the subject of this Request for Information, and/or the generation, handling, storage, transportation or disposal of the hazardous substances, hazardous wastes or industrial waste materials that came to be located at the Site.

RESPONSE

Thermo Fisher objects to this Request as outside the scope of the subject matters of inquiry identified in 42 U.S.C. §9604(e)(2)(A), (B) or (C). Without waiving their general or specific objections, Thermo Fisher and ATC respond that they have no information concerning the identities of additional individuals who may have information or documents relating to the subject of this Request and/or the generation, handling, storage, transportation or disposal of the hazardous substances, hazardous wastes or industrial waste materials that came to be located at the Site.

**STATEMENT IN LIEU OF CERTIFICATION
OF ANSWERS TO REQUEST FOR INFORMATION**

As set out in the General Objections above, it is the position of Thermo Fisher and ATC that the provisions of CERCLA do not authorize and/or require that persons or entities responding to a §104(e) request provide a certification or affidavit with respect to such response. However, Thermo Fisher and ATC state that, in connection with preparation of the §104(e) responses set forth above, they have undertaken a diligent inquiry to locate, review and assemble information in their possession, custody and control responsive to the Request. Thermo Fisher and ATC are also prepared to supplement this Response in the event that they uncover additional responsive information.

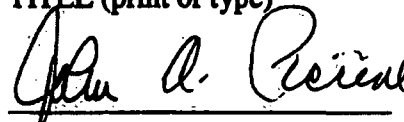
For Thermo Fisher Scientific Inc.:

John A. Piccione

NAME (print or type)

Assistant Secretary

TITLE (print or type)



SIGNATURE

Dated: *March 4, 2011*

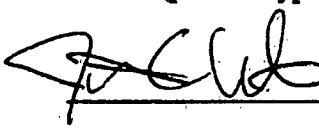
For Apogent Transition Corp.:

Jonathan C. Wilk

NAME (print or type)

Assistant Secretary

TITLE (print or type)



SIGNATURE

Dated: *March 4, 2011*

EXHIBIT LIST

Exhibit ¹	Description
H	Scott, <i>Marketing Textile Chemical Specialties in the United States and in Europe</i> , 53 AMERICAN DYESTUFF REPORTER, No. 13, pp. 131-134 (Jun. 22, 1964)
I	Deed from Keaton Rubber Co. to Crown Rubber Co.(Dec. 30, 1953) and Deed from Crown Rubber Co. to Keaton Rubber Co. (Sept.1, 1959)
J	Rider to Contract of Sale between Keaton Rubber Co. and SCCC (Sept. 14, 1962)
K	Contract of sale between Sybron Corporation and Diamond Chemical Co. Inc. (1981) (Lyndhurst plant) (excerpt)
L	Trademark Registrations pertaining to the products that Tanatex may have sold during the period of its operation in Kearny
M	CHEMICAL & ENGINEERING NEWS (1954-1963) (excerpts referring to Tanatex)
N	Agreement between Tanatex and Tanatex Chemical (Holland) (April 23, 1963)
O	Tanatex's Profit and Loss Statement for the fiscal year ending April 30, 1963
P	Scott, <i>Evaluation of Carriers for Dacron Dyeing</i> , 47 AMERICAN DYESTUFF REPORTER, No. 9, pp. 303-308 (Mar. 25, 1958)
Q	Ritter Pfaudler Corporation, Analysis of Financial Statements of Tanatex (Apr.23, 1968)
R	The Austin Company, Engineering drawing No. 106, Plumbing-Yard Connection, Manufacturing Plant, Thomas A. Edison (Jul. 12, 1929)
S	Thermo Fisher, Records Management Policy (as amended, Sept. 1, 2010)

¹ Exhibits A through G were attached to Thermo Fisher's initial, partial response to the Request.



MARKETING TEXTILE CHEMICAL SPECIALTIES IN THE UNITED STATES AND IN EUROPE

PETER J SCOTT

Tanatex Chemical Corporation
Lyndhurst, N J

THE word *marketing* as understood in the American and European business worlds has become a broad term used to describe the entire concept of selling on a grand scale. Oil refiners, for example, never sell their products—they market. This includes such things as advertising, sales campaigns, warehousing, the building of transcontinental pipelines, and whatnot. However, marketing nearly always applies to a product or commodity which is in existence, fully developed, ready to be delivered to the customer. This is where the chemical specialty manufacturer differs. In the dyeing and finishing industry there are many specific problems which can be solved by the judicious application of the proper chemicals, but more often than not, only the need exists—the chemicals are yet to be developed. For our purposes then, we will define the marketing of textile chemical specialties as the process which results in supplying dyers and finishers with chemical products developed to provide genuine solutions to specific technical problems.

It is clear that there is no room in this concept for selling pretty, viscous 20% alkanolamid solutions to produce a nice bead of foam on a jig, nor providing free color-matching or other consultation services for which the customer ultimately pays dearly through inflated product prices. Yet, after a specialty product has solved a problem which is widely encountered in the industry it does become a commodity, almost like caustic soda or sulfuric acid. There are dyehouses where all chemicals are handled by the "bowl", and using a concentrated alkanolamid only leads to waste. And who ever heard of the reputable dyestuff or chemical manufacturer who would refuse a request for technical service, no matter how outlandish, provided there is the least chance of finding something useful or new?

The Tanatex organization has developed a concept and system of marketing which encompasses these divergences, which is as valid abroad as it is in the United States. There are, of course, differences in the methods of marketing in the United States and in Europe; we will explore these later. Whether here or abroad, our paramount principle is major emphasis on products that solve real problems. Chemical specialties for which no true need exists are sheer waste, and it is neither ethical nor good business to develop or attempt to sell them.

Essentially, then, we market solutions to existing industry problems, in the form of chemical products. To do this involves combining marketing in the generally accepted sense of the word with product development that is both versatile and extensive. We have developed a specific procedure for the selection, evaluation and solution of problems that is best illustrated by examining how the step-by-step process works in a particular

case. (In order not to disclose any confidential information submitted to us, we chose as an example a now obsolete product—and one which is not used in the textile industry.)

THE TANATEX "PROJECT" PROCEDURE

STEP 1. BACKGROUND INFORMATION—Problems are easy to come by. In our organization, one in every ten technical representatives' call reports describes an existing industry problem for which a solution is needed. We are also called upon by companies that know, either from previous contact with us or through our advertising, of our capability to develop solutions to their particular problems.

The problem we are using as an illustration was brought to our attention by our attorneys. One of their clients, a brewery, was repeatedly threatened with law suits by beer drinkers who found white specks on the inside of the neck of the empty bottle. One of our technicians was sent to investigate and brought back these details: the specks were titanium dioxide from the labels of returned bottles which stuck to the inside of the neck of the bottle if the rotary nylon brushes used in the last compartment of the soaker did not have quite the resilience they had when new. Would we please provide some chemical that would maintain the resilience of the nylon bristles for at least 15, but preferably 30, days? Detergents did not work; they were ineffective because they had to be stable for at least 72 hours in a five per cent caustic soda solution at 160°F. We would, of course, need Federal Government approval for anything that went into a product for human consumption, but the brewery could not continue its present system and were ready to run full scale tests of anything we could submit. Our technician brought some labels, the composition of the soaker solution used, and some of the nylon brushes to our Applications Laboratory. Here, a preliminary investigation was made. The titanium dioxide from the label did indeed stick to glass and was not removable by brushing. The nylon bristles, of course, could not be made more resilient. Surfactants did not help because they were destroyed or made inactive by the five per cent caustic soda solution at the high temperature used. However, one of our surfactants then under development might have the required alkali stability. The recommendation in the Background Information Report issued by the Laboratory was that we set up a formal "Project" to solve the problem.

STEP 2. OBJECTIVE AND PROPOSED COURSE OF ACTION—In this case, the objective was clear

EUROPEAN REPORT

and simple: find a surfactant stable in five per cent caustic soda solution at 160°F for at least two weeks, and which prevents the adhesion of titanium dioxide to glass. The proposed course of action included the screening of our various surfactants for alkali stability as specified, and the development of a test method which would duplicate results of a large scale bottle soaker. If a suitable product were found, Food and Drug Administration regulations would have to be investigated.

STEP 3. IMPORTANCE OF PROJECT/ESTIMATE OF POTENTIAL MARKET—This step was also easy for this particular problem, although it often involves considerable difficulty. The brewery which had the problem estimated their consumption of a surfactant which would prevent the white specks would be 5000 pounds a week. That was based on what they had been using of an ineffective surfactant at the rate of one gram per liter of soaker solution. A price of \$.30 per pound would be well within the range of what they had been spending, and their consumption would stay at this level for about nine months out of twelve. In other words, they constituted a potential yearly market of \$55,000. We were also assured that nearly all breweries had this problem, since the particular type of label had gained enormous favor with bottlers. On the other hand, there was a trend to non-returnable bottles and cans, and the overall market would probably not exceed \$500,000 per year.

STEP 4. RESEARCH BUDGET—After considering the feasibility of the project, the proposed course of action, and the potential usefulness of the product, an initial allocation of 100 hours of either chemical or application laboratory time was made.

Up to this point, a project is in the hands of our technical director. It is now reviewed by management, who authorize the budget and allocate a priority. In this case, the project was approved as submitted, and returned to the technical director with a top priority. The laboratories went to work under his direction and expended their budget without reaching the desired result. Meanwhile, new reports had come in from the field which confirmed the existence of the problem in other breweries, but also indicated that the use of a special pressure nozzle instead of a rotating nylon brush would cause a foam problem. The matter still looked very promising, and management authorized 200 additional hours of laboratory time.

During this period, the technical director's task consists of three essentially concurrent steps:

- STEP 5.** (a) Chemical Laboratory Development.
(b) Application Laboratory and Field Evaluation.

STEP 6. Pilot Plant Run and Full Scale Production of Product Developed.

STEP 7. Patent Search.

The completion of these steps results in a report entitled "Product is Ready for Limited Marketing". Through the years, this report has become an eleven-page form which occasionally causes headaches, and always calls for a lot of work, but which is also the basis for the creation of a marketable commodity. In the case of "Merse"—by now, our speck removal project had received a name—the report contained the following information. First, an evaluation method had been developed which indicated that a minimum of twenty bottles had to be soaked in the presence of at least forty labels to obtain repeatable results. Next, the

screening of alkali stable surfactants showed that compatibility with five per cent caustic soda at 160°F was no problem, but surface activity under the same conditions was quite another story. Only one of the Tanatex fatty amino-acids showed promise with respect to compatibility and wetting, but it did not prevent the adhesion of the titanium dioxide particles. Homologues were synthesized, and one of them finally had all the required properties.

The patent search showed that we had a patentable process, and work on a draft for a patent application was begun.

The pilot plant run of the synthesis was troublesome because of excessive foaming during one manufacturing step, but this was overcome by changes in pressure and temperature. There was no difficulty with the FDA regulations, because the product was completely removed in the bottle washing operation. A large scale experimental run at the brewery gave outstandingly good results. The specks were completely gone, and the finished bottle was so clean that it had a lustrous appearance. A full plant production run went well, and 12,000 pounds of Merse were ready for shipment. Cost prices and manufacturing overhead had been determined, specifications set up, and storage tests initiated.

The Ready for Limited Marketing report is now submitted to management for approval. If it is deemed complete, it is passed on to the Product Manager who is then responsible for the marketing of the product.

STEP 8. LABEL AND PRELIMINARY TECHNICAL BULLETIN—This is truly the means of telling the ultimate user about what we have developed to help solve his problem. No effort is spared to present all the facts, and to present them from the user's point of view. At this stage, the preliminary nature of the information is emphasized. The final bulletin cannot be written until considerable tonnage has been successfully used in production runs.

There was no difficulty with the Merse preliminary technical bulletin, except having to state that its usefulness in bottle soakers which used spray nozzles rather than rotary brushes was still under investigation.

STEP 9. DETERMINE SALES PRICE—This is a relatively simple matter. If we underprice our products, we cannot stay in business; if we overprice them, the potential customer will not be able to use them and the end result would be the same. There is also the question of competition, which somehow becomes much keener when a product is even slightly overpriced. Merse was offered at \$.29 per pound in truckload lots, with the usual differentials for smaller lots.

STEP 10. FIRST MEETING—The product manager is now ready to submit the preliminary technical bulletin, a sample, and a price quotation to our salesmen, as well as to a carefully selected list of direct users and resellers. He will tell the salesmen how to approach specific customers, and probably get in touch with some himself.

In the case of Merse, we picked the ten biggest breweries in the country, plus three manufacturers of bottle soakers, and visited one after the other, all the way to St. Louis.

STEP 11. FIRST SALES MADE—We are now at the crucial point in our marketing program. If the preceding ten steps were carried out properly, and the

conclusions drawn were correct, there should be no difficulty in finding a ready market for the product, but we cannot be sure until the first sales results come in. In any case, a framework is provided to take advantage of the information gained from the initial sales effort. With Merse, we received orders from four of the ten breweries visited, an extremely high percentage.

STEP 12. WITH FIRST CUSTOMERS' REACTIONS ON HAND, REVIEW THE ENTIRE PROJECT

This step involves a meeting of management, salesmen, technical director, and product manager. Sometimes, the original concept (Steps 1 to 4) must be amended, or a new project started. If the first sales were successful, and the original premise essentially correct, only a relatively small amount of laboratory work is required for the next step.

With Merse, we ran into a snag with the pressure nozzle bottle soakers. Our surfactant created a foam problem, and we had been unable to find either a defoamer or a non-foaming homologue so far. A new project was set up to develop a non-foaming product for the same end use. On the other hand, Merse worked extremely well in the rotating brush bottle soaker, and we had four repeat customers who had bought a total of 30,000 pounds of the product during the preceding month.

STEP 13. PRODUCT READY FOR GENERAL MARKETING—This report is prepared by the technical director, who is constantly apprised of developments through copies of call reports, requests for technical service, review meetings, etc., and who keeps a complete file on each project. This is essentially an amended Ready for Limited Marketing report, in its final form.

For Merse, storage stability turned out to be excellent, patent application had been completed, and both its usefulness and limitations had been determined. Also on the credit side, the down-time of the soakers to replace brushes was practically eliminated—from eight changes to one—and the main problem of the white specks no longer existed.

STEP 14. FINAL TECHNICAL BULLETIN AND SALES CAMPAIGN—Upon approval of the Ready for General Marketing report by management, the product manager develops a final technical bulletin. He also outlines a sales campaign for direct users, resellers, and Tanatex Chemical (Holland) NV, our European manufacturing and sales organization. The sales price is reviewed, and the final bulletin is distributed together with a price quotation.

Only minor changes had to be made in the Merse bulletin. The sales campaign consisted of a direct mailing to all breweries in the United States, and a series of six advertisements in one of the trade magazines. Our effort was moderately successful; Merse sales averaged 50,000 pounds per month.

STEP 15. MAINTENANCE OF PROJECT—Our technical director continues to receive call reports and other information from the field pertaining to the product, and keeps his file up to date. He amends his Ready for General Marketing report as needed, and reviews the entire project at least once a year.—Merse was eventually made obsolete by the wide acceptance of the pressure nozzle bottle soaker which removed the titanium dioxide specks mechanically, and which re-

quired a non-foaming surfactant, if any at all. Returnable beer bottles were also more and more replaced by throw-aways and cans.

The system above covers both marketing in the generally accepted sense of selling, as well as the combination of selling and product development which we consider to be marketing in the chemical specialty field. With proper organization, there is a constant flow of problems and information which generates new and useful ideas and solutions to technical problems in our industry.

The problem of removing titanium dioxide specks from the necks of beer bottles was rather a mundane one; its solution had neither very valuable nor far-reaching results. It is cited as an example of procedure only. But the same system has been responsible for the creation of many products that have been used to solve major processing problems in the dyeing and finishing industry.

Tanatex has been best known for its contribution to the dyeing of polyester fibers. We had entered this field originally because a customer asked us how to get rid of phenol in waste waters. They had to stop dyeing T-54, a new Du Pont fiber, because the two per cent phenol solution used for this purpose was killing all the fish in the river. Well, we never found out how to remove phenol from waste water, but we did develop the first non-spotting—and, therefore, the first truly useful—carrier for dyeing T-54, Dacron polyester fiber.

It had many shortcomings: Tanalon would not stay in the dyebath to allow more than one dyestuff add; it was relatively toxic; and it did not give good color yields. Our concept of marketing textile chemical specialties would not let us stop at this point, of course. First, Tanavol was developed, less volatile, less toxic, and with better color yields. This was soon followed by Carolid, non-volatile and non-toxic for all practical purposes, which allows full utilization of the last ounce of disperse dye present.

In response to numerous requests from the industry, we developed a method for repairing streaky, spotted, and otherwise unsaleable polyester and triacetate content goods. For this purpose, a non-oxidizable carrier was designed and marketed as Tanalon Special. The method also involved the use of sodium chlorite which generates noxious, corrosive, and highly toxic chlorine dioxide fumes. This gave rise to another major project which resulted in the development of X-Tan Assist, and later an improved product, X-Tan Special C, corrosion and odor inhibitors for chlorite bleaching.

Our marketing program in the carrier field now consisted of inviting dyers and finishers to allow us to repair their polyester rejects. We were nearly always able to convert these either into first quality goods, or at least into saleable seconds. This was followed up by demonstrating that with the use of the proper Tanatex carrier initially, there would not be any ruined goods at all.

A major cause of what once were considered "carrier spots" was the presence of unemulsified fatty matter in the dyebath. Fat acts as a scavenger for oil soluble disperse dyes, forming deeply colored globules which eventually are picked up by the goods and cause a spot or a smear. A thorough study in the Tanatex laboratories, later confirmed independently by Leuzinger (1) showed that carriers were outstandingly efficient in removing fats from polyester—but poor in emulsifying them. Therefore, the fatty matter had to be eliminated prior to dyeing. Tanapon X-70 was developed for this

purpose. With this product it is possible to reduce carbon tetrachloride extractibles to less than one tenth of one per cent of the weight of the goods without resorting to a costly solvent scour, heretofore deemed an absolute necessity.

Certain disperse dyes invariably gave uneven, streaky dyeings on polyesters. This could be overcome by the use of nonionic retarders, but color yield suffered badly. Tanapal ME, an anionic surfactant, proved to be a true migration agent for disperse dyes with no practical effect on color yield.

Great emphasis was placed on the economics of carrier dyeing. A procedure for the evaluation of carriers was developed and published (2). It became quite clear to the industry that the Tanatex organization was interested in solving problems of interest to the entire industry, with thorough concern for the consumer's point of view. For this reason, not only our customers, but also fiber and dyestuff manufacturers came to us with new problems in this field. Carolid ELF-C, non-polar carrier, was developed in response to a request for a carrier that could be used for dyeing cationic, disperse and direct dyes in one bath; Tanalid 004 printing carrier was developed to answer the industry's need for a way to print polyesters with disperse dyes using conventional fixation methods—atmospheric ageing or thermofixation below 330°F.

These products, together with a number of others, very rapidly became marketable commodities in the United States. We received orders for samples and trial lots from many foreign countries as well, appointed sales agents in a dozen of them, and expanded our manufacturing facilities to take care of the rush we expected from abroad. It was at this point that we became aware of the value of our marketing concept: we became successful only in those foreign countries where we had an organization that could operate in the framework of our system. In 1958, we established a manufacturing subsidiary in Holland to supply our customers in Western Europe. It took only five months to set up a plant which would manufacture within our specifications, but it took three years to set up an organization to do the proper marketing job. Once this was accomplished, the volume in Western Europe rose from five to twenty-five per cent of that in the United States.

There are, of course, differences in the methods of marketing chemical specialties in the United States and in Europe, but they are not of a basic nature. The dyer and finisher there faces essentially the same problems as his counterpart here when a new fiber makes its appearance. There are no technical differences of importance, but there are some commercial ones which must be understood.

First, in Europe there is a flexible pricing system. In the United States, prices are published and, except for quantity differentials, they are the same for every customer. Exceptions are actually illegal. Not so in Europe. A salesman will discuss the merits of his product with his prospect, accept a sample request, offer technical service, try to determine a consumption figure, and finally end his call with, "I'll ask the office to make you a good price." The office then quotes a price, which the salesman is ready to reduce a little during his next visit. This does not mean that the true price is not quite firm and eventually the one that prevails, but the amenities must be observed. The matter becomes much more serious when the American businessman is the purchaser, and does not realize that his major raw materials will not become available to him at their real

prices until he has shown his mettle. The only consolation is that the newly established European has exactly the same difficulties.

Next, there still are national borders all across Western Europe. To ship fifty drums of Carolid from Lyndhurst, New Jersey to Charlotte, North Carolina, a distance of 650 miles, requires the preparation of a bill of lading and one phone call. Thirty-six hours later the goods are delivered to the customer. To ship one drum of Carolid from Ede, Holland, the location of the new Tanatex plant, to Lyon, France, a distance of 500 miles, involves customs declarations, forwarders' forms, imported-raw material-duty-recovery forms, foreign exchange forms, and a number of others. In France, the goods have to be imported, duties paid, etc. This means that it is absolutely necessary to have an agent, or representative, wherever there is a customer. It also means that when a shipment is made in France, for instance, a letter is sent out which invariably closes with an expression of best wishes that the customer receive the goods in good order and in good time. He always does, but it may take from ten to twenty days. Overnight shipments are not expected.

This brings us to the major difference between the European and the American dyer: the European takes considerably more time to deliver. He has more time to concern himself with chemicals and new processes and perhaps to become a little more sophisticated in this respect than his American brother who has to ship 1000 pieces two days after receipt of the dye order—and who literally can only tend the machinery that will produce the yardage needed. This places greater demands for technical service on the American supplier of chemicals, who in turn gains a great deal of know-how which is helpful in developing new processes.

Our experience in Western Europe has been most gratifying. The marketing concept of developing and supplying chemicals which provide genuine solutions to specific problems was accepted everywhere. Some major European dyestuff companies started to recommend our products after they had satisfied themselves that they were the best ones available for the purpose, and even went so far as to de-emphasize their own competitive items.

Today, our representatives are active in every Western European country, in Central and South America, Asia and Australia. Research and development facilities have been developed in the Dutch Tanatex organization which allow the full application of our marketing system to the problems encountered by the dyeing and finishing industry in Europe. The knowledge and experience gained on one side of the Atlantic is equally valuable on the other, and the solution for a problem in Enschede, Holland, often means the answer to a question in Fayetteville, S. C. Our concept of product development opened our international market; in turn, the varying challenges presented by our international program of marketing are our greatest stimulus to growth.

TRADEMARKS

Caroloid, Tanalid, Tanalon and Tanaval are registered trademarks, and Tanapal ME, Tanapon X-70, X-Tan Assist and X-Tan Special C are trade names of the Tanatex Chemical Corp.

REFERENCES

- (1) Leuzinger, J. Einige Erfahrungen auf der Veredlungspraxis von Polyester-Wolle-Mischartikeln. *SVF Fachorg Textilber* 16, 541-6 (1961).
- (2) Scott, P. Evaluation of Carriers for Dacron Dyeing. *Am Dyestuff Reprtr* 47, No. 9 (1958).



This Indenture,

Made the First day of September, in the year of our Lord
One Thousand Nine Hundred and Fifty-Nine

Between CROWN RUBBER PRODUCTS, INC., a New Jersey corporation,
having its principal place of business

In the Town of Kearny County of Hudson
and State of New Jersey, party of the first part;

And

KEATON RUBBER CO., a New Jersey corporation,
having its principal place of business

In the Town of Kearny County of Hudson
and State of New Jersey, party of the second part;

Witnesseth, That the said party of the first part, for and in consideration of the sum of
One (\$1.00) Dollar and other good and valuable consideration - - -
lawful money of the United States of America, to it in hand well and truly paid by the said
party of the second part, at or before the sealing and delivery of these presents, the receipt whereof is
hereby acknowledged; and the said party of the first part being therewith fully satisfied, contented and
paid, has given, granted, bargained, sold, aliened, released, enfeoffed, conveyed and confirmed and by
these presents do as give, grant, bargain, sell, alien, release, enfeoff, convey and confirm unto the said
party of the second part, and to its successors
and assigns, forever;

All that certain
tract or parcel of land and premises, hereinafter particularly described, situate, lying and being
in the Town of Kearny County of Hudson
and State of New Jersey:

PARCEL No. 1.

BEGINNING at a point formed by intersecting the northeasterly
line of Belleville Turnpike with the southerly boundary line of land con-
veyed to The White Tar Co., of N. J., Inc., by deed dated October 4, 1915
recorded in Deed Book 1238, page 408 in the Register's Office of Hudson
County, N. J.; running thence (1) along said boundary line N. 58° 22' 30"
E. 72.77 feet; thence (2) still along the same parallel with the center
line of lands of the Pennsylvania Railroad Company and distant 870 feet
southerly therefrom N. 74° 15' E. 1039.47 feet to the northwesterly cor-
ner of lands conveyed to the Koppers Co., Inc., by Thomas A. Edison, In-
corporated by deed dated November 18, 1946; thence (3) along the westerly
line of land so conveyed, S. 15° 45' E. 400 feet to the southerly line of
land conveyed to Thomas A. Edison by James H. Rhodes and Co., by deed
dated July 29, 1918 and recorded in Deed Book 1288 on page 299 in the
office of the Register of Hudson County; thence (4) along the same para-
llel with the second described course, S. 74° 15' W. 638.19 feet to the
northerly side line of the Old Newark Branch of the Erie Railroad; then
(5) along the same N. 71° 48' W. 541.95 feet to the northeasterly line
of Belleville Turnpike; and running thence (6) along the said line of
said Turnpike, N. 31° 37' 30" W. 80.54 feet to the point and place of
BEGINNING.

REVENUE
STAMPS

\$ 111.25

RECEIVED

MAR 31 10 27 AM 1960

HUDSON COUNTY
CLERK

PARCEL No. 2.

BEGINNING at a point formed by the intersecting of the northeasterly line of Belleville Turnpike with the southerly boundary line of land conveyed to Thomas A. Edison by James H. Rhodes and Co., by deed dated July 29, 1918, and recorded in Book 1288 of Deeds on page 299 in the office of the Register of Hudson County; running thence (1) along said southerly boundary line, N. 74° 15' E. 245.31 feet to a point in the southerly side line of the Old Newark Branch of the Erie Railroad; thence (2) along the same, N. 71° 48' W. 365.77 feet to the northeasterly line of the Belleville Turnpike; and running thence (3) along said northeasterly line of the same, S. 31° 37' 30" E. 212.34 feet to the point and place of BEGINNING.

Both parcels subject, however, to the estate and rights in and about a strip abutting on the Belleville Turnpike conveyed to the Mayor and Common Council of Jersey City by John H. Coster and others, by deed dated June 16, 1853 and recorded in Deed Book 33, page 261, in the office of the Register of Hudson County.

Subject to such facts as an accurate survey may disclose and to restrictions of record provided they do not render the title unmarketable and to municipal and zoning ordinances.

Together with all the estate, right, title and interest, property claim and demand whatsoever of the said party of the first part in and to that portion of the lands hereinabove referred to as lands of the Old Newark Branch of the Erie Railroad which lies between Parcels 1 and 2 hereinabove described.

Being the same premises conveyed to Crown Rubber Products, Inc., by Keaton Rubber Co., by deed dated December 30, 1953 and recorded in the Register's office of Hudson County in Book 2574 of Deeds for said County page 391.

This conveyance is made expressly subject to a first mortgage in the original sum of \$200,000.00 held by Thomas A. Edison Incorporated dated December 30, 1953 according to all the terms and conditions thereof.

DEF 2822 FEB 17

Together with all and singular the houses, buildings, trees, ways, waters, profits, privileges, and advantages, with the appurtenances to the same belonging or in anywise appertaining;

Also, all the estate, right, title, interest, property, claim and demand whatsoever, of the said party of the first part, of, in and to the same, and of, in and to every part and parcel thereof,

To have and to hold all and singular the above described land and premises, with the appurtenances, unto the said party of the second part, its successors, heirs and assigns, to the only proper use, benefit and behoof of the said party of the second part, its successors, heirs and assigns forever.

And the said party of the first part,

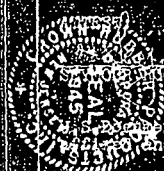
assigns for itself, its successors and assigns, promise and agree to and with the said party of the second part, its successors and assigns that it has not made, done, committed, executed or suffered any act or acts, thing or things whatsoever, whereby or by means whereof the above mentioned and described premises, or any part or parcel thereof, now are, or at any time hereafter shall or may be impeached, charged or encumbered, in any manner or way whatsoever.

In Witness Whereof, the party of the first part has caused these presents to be signed by its proper corporate officers and caused its proper corporate seal to be hereunto affixed, the day and year first above written.

Signed, sealed and delivered in presence of

CROWN RUBBER PRODUCTS, INC.,

BY Michael Rogow
MICHAEL ROGOW, President



Michael Rogow
MICHAEL ROGOW, Secretary

Postage stamps \$11.10 paid and cancelled.



State of New Jersey,
County of Essex } ss.

Be It Remembered, that on this Seventh day of September,
in the year One Thousand Nine Hundred and Fifty-Nine,
An attorney at Law of New Jersey
personally appeared Seymour Rogow

who, being by me duly sworn on his oath, doth depose and make proof to my satisfaction, that he
is the Secretary of Crown Rubber Products, Inc.

the grantor named in the within instrument; that Michael Rogow
is the President of said corporation; that the execution, as well as the making
of this instrument, has been duly authorized by a proper resolution of the board of directors of said
corporation; that deponent well knows the corporate seal of said corporation; and the seal affixed to
said instrument is such corporate seal and was thereto affixed and said instrument signed and delivered
by said President, as and for his voluntary act and deed and as and for the voluntary
act and deed of said corporation, in presence of deponent, who thereupon subscribed his name thereto
as witness.

Sworn and subscribed before me,
at Newark, N.J.
the date aforesaid

Seymour Rogow
SEYMOUR ROGOW

Martin Simon
Martin Simon
Attorney at Law of New Jersey

ENTERED

Deed

CROWN RUBBER PRODUCTS, INC.,
a New Jersey Corporation

TO 1435

KEATON RUBBER CO., a
New Jersey Corporation

Dated, September 7, 1959

Recorded in the Office of
the County of N.J.
on the 7th day of September,
at 10 o'clock, in the
presence of two witnesses
Recorded in Book 1435 of DEEDS for
said County on page 1435

LAW OFFICES
MARTIN SIMON
60 Park Place
Newark, 2, N. J.

State of New Jersey,
County of } ss.

Be It Remembered, that on this 7th day of September,
in the year One Thousand Nine Hundred and Fifty-Nine,
personally appeared Seymour Rogow
before me, the subscriber,

who, I am satisfied, the grantor mentioned in the within instrument, to
whom I first made known the contents thereof, and thereupon acknowledged that
signed, sealed and delivered the same as voluntary act and deed, for the uses and
purposes therein expressed.



RIDER TO
CONTRACT OF SALE

Between KEATON RUBBER CO., a New Jersey Corporation, as Seller, and STANDARD CHLORINE CHEMICAL CO., INC., a New Jersey Corporation, as Purchaser, dated September 14, 1962.

1. Upon execution and delivery of the within agreement, the Purchaser is expressly granted:

(a) Permission to enter upon the lands and premises and remove therefrom the Cyclone fence running along the second course of the description of the First Parcel and to dispose of the same in such manner as it sees fit.

(b) To construct or re-construct, in such manner as it sees fit, any and all roads or access to, from or in and about the premises described herein.

(c) Permission to enter upon the areas described as 2 "Tank Farm" and 3 "Cooling Tower" on the map attached hereto and made a part hereof, and therein and thereon to perform such construction, re-construction or alteration work as it may require for its purposes and at its own cost and expense.

(d) Not later than 2 weeks from the date hereof, the Seller will permit the Purchaser to come into the area designated on the attached map as 1 "Molding Units", and therein and thereon to perform such construction, reconstruction or alteration work as it may require for its purposes and at its own cost and expense.

Not later than 4 weeks from the date hereof, the Seller will permit the Purchaser to come into the area designated on the attached map as 4 "Crystalizers", and therein and thereon to perform such construction, re-construction or alteration work as it may require for its purposes and at its own cost and expense.

In the event that the title agreed to be conveyed is not marketable and insurable, the Seller will indemnify the Purchaser to the extent of the expenditures made by it in connection with all of the foregoing permissive uses in this paragraph "1", except, however, that no right to such indemnification shall arise in the event of a default by the Purchaser.

2. The Purchaser shall promptly cause an examination to be made of the title which is the subject of this contract and promptly upon the receipt by the Purchaser of the title examination report, if the title described herein is not marketable and insurable, prompt notice shall be given by the Purchaser to the Seller and all work by it shall promptly cease and come to an end and any demand for indemnification shall be made based on such work as it may have done on the premises to such time. Such notice shall be given by Registered Mail, Return Receipt Requested, addressed to the Seller c/o Martin Simon, Esq., 60 Park Place, Newark, N. J. and in no case shall such notice be sent later than October 14, 1962.

W.D.

Any rights of the Purchaser to indemnification under paragraph "1" shall cease and come to an end upon the transfer of title pursuant to the within contract.

3. The Seller is hereby given permission to remain in possession of the premises now occupied by it for a period not later than December 10, 1962 and shall be required to pay to the Purchaser a rental of One (\$1.00) Dollar per month for the period from October 14, 1962 to December 10, 1962. In addition to such rental, the Seller shall be required to pay all taxes, insurance and all other carrying charges and expenses of and for the premises hereby conveyed and in connection with the management and operation of the said property, and the Seller shall be entitled to receive, during such period, the rent from the Tenant. In the event that the Seller shall not have vacated the premises on or before December 10, 1962:

(a) The Seller shall thereafter pay to the Purchaser, for the premises now occupied by it, a rental of Five Thousand (\$5,000.00) Dollars per month.

(b) In addition to said rental, the Seller shall be required to pay all taxes, insurance and all other carrying charges and expenses of and for said premises hereby conveyed and in connection with the management and operation of the said property, from and after December 10, 1962 to the date on which it vacates said premises.

(c) The Purchaser shall be entitled to receive and retain the rent from the Tenant, from and after December 10, 1962.

(d) The Purchaser shall have the right, at any time, to summarily evict the Seller and to damages.

(e) All remedies of Purchaser shall be cumulative.

4. Anything to the contrary notwithstanding, the Seller shall before closing, satisfy any and all mortgages on said premises.

5. On December 10, 1962, or in the event that the Seller vacates the premises prior thereto, then, on the date of such vacating of the premises, adjustment shall be made between the parties for taxes, insurance, water rents and the rents collected or due from the Tenant, Tanatex Chemical Corp., and, at the same time, the Seller will turn over to the Purchaser, the advance rental paid by Tanatex on its lease #3 for the period from December 10, 1962 or the date of such vacating (to February 14, 1964), which rental was prepaid at the rate of \$175.00 per month, and in addition thereto, the Seller will turn over to the Purchaser, the sum of \$3,800.00 deposited by Tanatex as security for the performance of leases #1 and #2. In addition thereto, the

Seller will turn over to the Purchaser the sum of \$1,000.00 as a concession and in full and final discharge of any claim which the Purchaser may have as against the Seller relating to rights of the Purchaser with regard to removal of any property from the demised premises by the tenant; and said sum of \$1,000.00 shall be retained by the Purchaser whether or not it has or asserts any such claim against the Seller, or any claim against the tenant as described in the paragraph below.

Anything to the contrary notwithstanding, the Purchaser shall make payment to the Seller of \$296,500.00 upon delivery of the deed and shall retain the remaining \$5,000.00 of the purchase price pending the vacating of the premises by the Seller and the adjustments then to be made as aforesaid.

Nothing herein contained shall limit or abridge the right of the Purchaser to prosecute any claim which it may have against the tenant, Tanatex, in the event that said tenant removes from the demised premises any property which, under the terms of the leases between the Seller and the said tenant, could be claimed by the Seller to be or to have become the property of the landlord, and the Purchaser shall have all of the rights against said tenant afforded to the lessor under said leases.

WCK
✓



This Contract, made the _____ day of _____ 19 81

Between SYBRON CORPORATION, a New York corporation,
having a place of business at 1100 Midtown Tower, Rochester,
New York 14604

residing and located at
in the _____

and State of _____

of _____

herein designated as the Seller,

And DIAMOND CHEMICAL CO., INC., a New Jersey corporation,
having a place of business at Hook Road, Bayonne, New Jersey 07002

residing and located at
in the _____

and State of _____

of _____

herein designated as the Purchaser;

Witnesseth, That the Seller, for and in consideration of the sum of Six Hundred Eighty
Seven Thousand Five Hundred (\$687,500.00) Dollars
to be paid and satisfied as stipulated herein, and also in consideration of the covenants and agreements
herein contained and to be performed by the Purchaser, agrees to convey to the Purchaser, free from all
encumbrances except as this contract may otherwise provide, by deed of bargain and sale
covenant against grantor on the date herein fixed for the closing of title,

All those certain lots, tracts or parcels of land, together with the buildings and
improvements thereon and the privileges and appurtenances thereto appertaining, situate, lying and being
in the Township of _____ of _____ in the
County of _____ and State of New Jersey, more particularly described as follows:

FIRST TRACT: BEING parcel No. 8 as shown on a map entitled "Sub-
division of property of D.L. & W. Railroad Company, Borough of
North Arlington and Township of Lyndhurst, Bergen County, New
Jersey", prepared by Ronald B. Brown, Engineer, dated November
1958 and revised December 1, 1958 and filed in the Bergen County
Clerk's Office.

BEGINNING at a point in the easterly line of the whole tract where
the same is intersected by the division line between parcels Nos. 7
and 8, said point being also 40 feet southwesterly from and at right
angles to the center line of the eastbound main track of the Boonton
Branch of the D.L. & W. R. R. Co., and running thence (1) south 6
degrees 47 minutes 00 seconds east 630.14 feet; thence (2) south 83
degrees 43 minutes 30 seconds west 212.25 feet; thence (3) north 6
degrees 47 minutes 00 seconds west 628.26 feet; thence (4) north 83
degrees 13 minutes 00 seconds east 212.24 feet to the point or place
of BEGINNING.

SECOND TRACT: BEING parcels Nos. 8A and 8B as shown on a subdivision
map prepared by Allen & Neglia, Engineers, Rutherford, New Jersey,
dated February, 1960.

BEGINNING at a point in a line parallel with the center line of the
eastbound main track of the Boonton Branch of the D.L. & W. R. R.
Co. and 40 feet southwesterly and at right angles therefrom, said
Beginning point being the most southeasterly corner of Parcel No. 8
as shown on a map entitled "Subdivision of property of D.L. & W. R.
R. Co., Borough of North Arlington and Township of Lyndhurst, Bergen
County, New Jersey", dated November 1958 and prepared by Ronald B.
Brown, Engineer; said Beginning point also being distant 1876.27
feet southeasterly from the southeasterly line of Newark Avenue as
measured along the above described line parallel with and 40 feet
southwesterly from the center line of the eastbound main track of
the Boonton Branch of the D.L. & W. R. R. Co.; and from said point
of Beginning running thence (1) south 6 degrees 47 minutes 00
seconds east 140 feet along the above described line parallel with
and 40 feet southwesterly from the center line of the eastbound main
track of the Boonton Branch of the D.L. & W. R. R. Co., thence (2)
south 83 degrees 43 minutes 30 seconds west 212.25 feet to a point;

thence (3) north 6 degrees 47 minutes 00 seconds west 140 feet to the southwesterly corner of the aforesaid parcel No. 8; thence (4) north 83 degrees 43 minutes 30 seconds east along the southerly side of Parcel No. 8, 212.25 feet to the point or place of BEGINNING.

BEING the same premises conveyed to The Tanatex Chemical Corporation by deed of Avon Enterprises, Inc. dated April 27, 1962 and recorded April 30, 1962 in the Bergen County Clerk's Office in Book 4354 of Deeds for said county at page 25. On December 31, 1970 an agreement of merger between The Tanatex Chemical Corporation, a New Jersey corporation, and Sybron Corporation, a New York corporation, was filed with the Secretary of State of New Jersey showing Sybron Corporation as the surviving corporation.

The parcel of property approximately 628.26 feet by 10 feet conveyed by The Tanatex Chemical Corporation to Gaccione Bros. & Co., Inc. by deed dated May 2, 1963 and recorded on May 29, 1963 in the Bergen County Clerk's Office in Book 4497 for Deeds for said county at page 339 is excepted from the above and shall be so indicated in the Deed to be delivered.

SEE RIDER

~~Grantee's Payment of taxes for property shown on the tax map for the year 1971 shall be paid by the Grantor, who shall also pay the taxes for the year 1972.~~

~~Upon execution of this Deed, the Grantor shall pay to the Grantee the sum of \$100.00.~~

~~Before the execution of this Deed, the Grantor shall pay to the Grantee the sum of \$100.00.~~

~~By executing this Deed, the Grantor agrees to indemnify and hold the Grantee harmless and to pay the sum of \$100.00 to the Grantee.~~

~~On the execution of this Deed,~~

~~the Grantor shall pay to the Grantee the sum of \$100.00, which shall be applied to the interest payable on the mortgage shown on the tax map for the year 1971, and the balance of the sum shall be paid to the Grantee.~~

And it is Agreed, by the parties to these presents, that the Purchaser may enter into and upon the said land and premises on the closing of title and from thence take the rents, issues and profits to the use of the Purchaser.

The rents of said premises, ~~including water rents, taxes, fuel and interest on Mortgage, if any, shall be adjusted, apportioned and allowed as of the day of delivery of said deed.~~

~~As a condition of this purchase, the Seller shall deliver to the Purchaser a deed of title insurance policy for the full purchase price of the premises, and the Seller shall be responsible for the cost of such policy. The Seller shall also deliver to the Purchaser a copy of the title insurance policy and a copy of the title insurance abstract.~~

The risk of loss or damage to said premises by fire or otherwise until the delivery of said deed is assumed by the Seller. In case the premises shall suffer injury beyond the ordinary wear and tear, the Seller shall repair the damage before the date set for delivery of said deed or make an appropriate deduction from the purchase price herein stated.

It is understood and agreed that the buildings, driveways and all other improvements upon said premises are all within the boundary lines of the property as described in the deed therefor, and that the Seller shall be responsible for the cost of any survey or other investigation necessary to determine the boundary lines of the property, and the Seller shall be responsible for the cost of any survey or other investigation necessary to determine the boundary lines of the property.

The Seller warrants and represents that the title to the premises is good and valid, and that the Seller has the right to convey the premises to the Purchaser, and that the Seller has the right to convey the premises to the Purchaser.

The above described premises are sold subject to zoning ordinances, tenancies, such facts as an accurate survey may disclose and restrictions of record, if any.

If at the time for the delivery of the deed, the premises or any part thereof shall be or shall have been affected by an assessment or assessments which are or may become payable in annual installments of which the first installment is then due or has been paid, then for the purposes of this contract all the unpaid installments of any such assessment, including those which are to become due and payable after the delivery of the deed, shall be deemed to be due and payable and to be liens upon the premises affected thereby and shall be paid and discharged by the Seller thereof, upon the delivery of the deed. Unconfirmed improvements or assessments, if any, shall be paid and allowed by the Seller on account of the purchase price, if the improvement or work has been completed on or before closing.

And this further Agreed, that the title to the premises shall be closed and the deed and an adequate affidavit of title and corporate resolution delivered on or before Aug. 1, 1981 between 9:00 a.m. and 4:00 p.m. at the offices of Fox and Fox, 570 Broad Street, Newark, New Jersey.

All sums paid on account of this contract, and the reasonable expense of the examination of the title to said premises are hereby made liens thereon, but such liens shall not continue after default by the Purchaser under this contract.

And the Seller warrants and represents that the title to the premises is good and valid, and that the Seller has the right to convey the premises to the Purchaser, and that the Seller has the right to convey the premises to the Purchaser.

~~And the Seller warrants and represents that the title to the premises is good and valid, and that the Seller has the right to convey the premises to the Purchaser, and that the Seller has the right to convey the premises to the Purchaser.~~

In Witness Whereof, the parties hereto have hereunto set their hands and seals or caused these presents to be signed by their proper officers and their corporate seal to be hereto affixed, the day and year first above written.

Signed, Sealed and Delivered
in the presence of
or Attested by

[Signature]
Frederic Diamond

SYBRON CORPORATION

By:

[Signature]
DIAMOND CHEMICAL CO., INC.

By:

[Signature]
ABRAHAM DIAMOND
FRED DIAMOND



United States Patent Office

772,495

Registered June 30, 1964

PRINCIPAL REGISTER Trademark

Ser. No. 174,128, filed July 31, 1963

AMFOCIDE

The Tanatex Chemical Corporation (New Jersey corporation)
Belleville Turnpike
Kearny, N.J.

For: CLEANING AGENTS AND DETERGENTS
FOR INDUSTRIAL USE, in CLASS 52.
First use Feb. 11, 1963; in commerce Feb. 11, 1963.

United States Patent Office

661,253
Registered May 6, 1958

PRINCIPAL REGISTER Trademark

Ser. No. 31,705, filed June 10, 1957

CAROLID

The Tanatex Chemical Corporation (New Jersey corporation)
Belleville Turnpike
Kearny, N. J.

For: COMPOUNDS INSTRUMENTAL IN THE
FIXATION OF COLORING MATTERS UPON FIBRES — NAMELY, DYEING ASSISTANTS AND
LEVELING, EXHAUSTING, PENETRATING, WETTING, AND DISPERSING AGENTS—in CLASS 6.
First use May 20, 1957; in commerce May 20, 1957.

Registered June 23, 1953

Registration No. 576,194

PRINCIPAL REGISTER
Trade-Mark

UNITED STATES PATENT OFFICE

The Tanatex Corporation, New York, N. Y.

Act of 1946

Application May 25, 1950, Serial No. 598,125

CELLOLUBE

STATEMENT

The Tanatex Corporation, a corporation duly organized under the laws of the State of New York, located and doing business at 516 Fifth Avenue, New York 18, New York, has adopted and is using the trade-mark shown in the accompanying drawing, for TEXTILE SOFTENERS, in Class 6, Chemicals and chemical compositions, and presents herewith five facsimiles showing the trade-mark as actually used in connection with such goods, the trade-mark being applied to the containers of said goods, and requests that the

same be registered in the United States Patent Office on the Principal Register in accordance with the act of July 5, 1946.

The trade-mark was first used on May 14, 1948, and first used in commerce among the several States, which may lawfully be regulated by Congress on the same date.

THE TANATEX CORPORATION,
By PETER J. SCOTT,
Vice-President.

Int. Cl.: 1

Prior U.S. Cl.: 6

United States Patent Office

Reg. No. 995,743
Registered Oct. 15, 1974

TRADEMARK
Principal Register

CHEMOCARRIER

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: COMPOUNDS USED IN THE FIXATION OF
COLORING MATTERS UPON FIBERS, in CLASS 6
(INT. CL. 1).

First use Aug. 24, 1962; in commerce Aug. 24, 1962.

Ser. No. 401,801, filed Sept. 1, 1971.

United States Patent Office

958,377

Registered May 8, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 421,461, filed Apr. 17, 1972

DYEWELD

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: SUBSTANCES USED IN THE FIXATION OF
COLORING MATTER ON TEXTILE FIBERS, in
CLASS 6 (INT. CL. 1).

First use Aug. 4, 1970; in commerce Aug. 4, 1970.

J. C. DEMOS, Examiner

Int. Cl.: 3

Prior U.S. Cl.: 52

United States Patent and Trademark Office

Reg. No. 1,860,617

Registered Nov. 1, 1994

**TRADEMARK
PRINCIPAL REGISTER**

MERSE

SYBRON CHEMICAL HOLDINGS INC. (DELA-
WARE CORPORATION)
1105 NORTH MARKET STREET, SUITE 1300
WILMINGTON, DE 19899

FIRST USE 0-0-1972; IN COMMERCE
0-0-1972.

SEC. 2(F).

FOR: COMPOUNDS INSTRUMENTAL IN
CLEANING TEXTILE FABRICS AND PROC-
ESSING MACHINES, IN CLASS 3 (U.S. CL. 52).

SER. NO. 74-408,678, FILED 6-29-1993.

CHERYL BUTLER, EXAMINING ATTORNEY

United States Patent Office

784,241

Registered Feb. 2, 1965

PRINCIPAL REGISTER Trademark

Ser. No. 190,837, filed Apr. 10, 1964

MIGRASSIST

The Tanatex Chemical Corporation (New Jersey corporation)
Page and Schuyler Aves.
Lyndhurst, N.J.

For: LEVELING AGENT FOR CATIONIC DYES,
in CLASS 6.
First use July 17, 1963; in commerce July 17, 1963.

Registered Apr. 13, 1954

Registration No. 588,242

PRINCIPAL REGISTER
Trade-Mark

UNITED STATES PATENT OFFICE

The Chem-Plex Company, Inc., Jersey City, N. J.

Act of 1946

Application April 2, 1953, Serial No. 644,597

PLEXENE

STATEMENT

The Chem-Plex Company, Inc., a corporation duly organized under the laws of the State of New Jersey, located and doing business at 194 Henderson Street, Jersey City, N. J., has adopted and is using the trade-mark shown in the accompanying drawing, for **CHEMICALS IN LIQUID OR POWDERED FORM USED AS SEQUESTERING AGENTS IN THE TREATMENT OF WATER**, in Class 6, Chemicals and chemical compositions, and presents herewith five specimens (or facsimiles) showing the trade-mark as actually used in connection with such goods, the

trade-mark being applied to containers of said goods or to tags or labels affixed thereto, and requests that the same be registered in the United States Patent Office on the Principal Register in accordance with the act of July 5, 1946.

The trade-mark was first used on December 31, 1952, and first used in commerce among the several States, which may lawfully be regulated by Congress on the same date.

THE CHEM-PLEX COMPANY, INC.,
By **SIDNEY M. WEINSTEIN,**
President.

United States Patent Office

950,622

Registered Jan. 16, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 411,931, filed Jan. 6, 1972

TANADEL

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: DYEING ASSISTANTS FOR TEXTILE FIBERS, in CLASS 6 (INT. CL. 1).
First use June 12, 1961; in commerce June 12, 1961.

United States Patent Office

603,173
Registered Mar. 15, 1955

PRINCIPAL REGISTER Trade-Mark

Ser. No. 658,944, filed Jan. 4, 1954

TANALON

The Tanatex Chemical Corporation (New Jersey corporation)
194 Henderson St.
Jersey City, N. J.

For: DYEING ASSISTANTS FOR TEXTILE FIBRES, in CLASS 6.
First used June 23, 1953, and in commerce June 23, 1953.
Owner of Reg. No. 576,799.

United States Patent Office

694,769
Registered Mar. 22, 1960

PRINCIPAL REGISTER Trademark

Ser. No. 75,373, filed June 8, 1959

TANALID

The Tanatex Chemical Corporation (New Jersey corporation)
Belleville Turnpike
Kearney, N.J.

For: PRINTING AND DYEING AGENTS FOR
POLYESTER FIBERS AND OTHER SYNTHETICS,
in CLASS 6.

First use May 14, 1958; in commerce May 14, 1958.
Owner of Reg. Nos. 576,799, 644,992, and others.

Registered June 30, 1953

Registration No. 576,799

PRINCIPAL REGISTER
Trade-Mark

UNITED STATES PATENT OFFICE

The Tanatex Chemical Corporation,
Jersey City, N. J.

Act of 1946

Application September 26, 1952, Serial No. 635,858

TANALUBE

STATEMENT

The Tanatex Chemical Corporation, a corporation duly organized under the laws of the State of New Jersey, located and doing business at 194 Henderson Street, Jersey City, New Jersey, has adopted and is using the trade-mark shown in the accompanying drawing, for TEXTILE SOFTENERS AND TEXTILE LUBRICANTS, in Class 8, Chemicals and chemical compositions, and presents herewith five specimens showing the trade-mark as actually used in connection with such goods, the trade-mark being applied to containers of said goods or to tags or labels attached thereto, and requests that the same be

registered in the United States Patent Office on the Principal Register in accordance with the act of July 5, 1946.

The trade-mark was first used on May 13, 1952, and first used in commerce among the several States, which may lawfully be regulated by Congress on the same date.

THE TANATEX CHEMICAL
CORPORATION,
By PETER J. SCOTT,
President.

United States Patent Office

956,322
Registered Apr. 3, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 411,929, filed Jan. 6, 1972

TANAPAL

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: CHEMICALS FOR THE TEXTILE INDUSTRY—NAMESLY, DISPERSING AGENTS, LEVELING AGENTS, DYEING ASSISTANTS, EMULSIFYING AGENTS AND ASSISTANTS, TEXTILE LUBRICANTS AND WETTING AGENTS—in CLASS 6 (INT. CL. 1).

First use May 14, 1962; in commerce May 14, 1962.

United States Patent Office

955,541
Registered Mar. 20, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 411,924, filed Jan. 6, 1972

TANAPON

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: CHEMICALS FOR THE TEXTILE INDUSTRY—NAMELY, NON-FOAMING SURFACTANTS; AGENTS FOR LEVELING, SOFTENING, WETTING, BLEACHING, CARBONIZING, DISPERSING, EMULSIFYING AND KIER-BOILING; DYEING ASSISTANTS; AND CRABING ASSISTANTS—in CLASS 6 (INT. CL. 1).

First use July 9, 1962; in commerce July 9, 1962.
Owner of Reg. Nos. 576,799, 806,854, and others.

United States Patent Office

950,623
Registered Jan. 16, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 411,932, filed Jan. 6, 1972

TANAQUAD

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: ANTISEPTICS AND STERILIZING AGENTS
USED BY THE TEXTILE INDUSTRY TO SANITIZE
FABRICS, in CLASS 6 (INT. CL. 1).
First use Sept. 5, 1962; in commerce Sept. 5, 1962.

United States Patent Office

616,978
Registered Nov. 29, 1955

PRINCIPAL REGISTER Trademark

Ser. No. 679,426, filed Jan. 4, 1955

TANATERGE

The Tanatex Chemical Corporation (New Jersey corporation)
Belleville Turnpike
Kearny, N. J.

For: DETERGENTS AND WASHING COM-
POUNDS FOR GENERAL USE AND FOR USE IN
THE TEXTILE INDUSTRY, in CLASS 52.

First used Oct. 27, 1949, and in commerce Oct. 27,
1949.

Owner of Reg. Nos. 576,799 and 603,173.

Int. Cl.: 1

Prior U.S. Cl.: 6

Reg. No. 644,992

United States Patent and Trademark Office

Registered May 7, 1957

10 Year Renewal

Renewal Term Begins May 7, 1997

**TRADEMARK
PRINCIPAL REGISTER**

TANAVOL

SYBRON CHEMICAL HOLDINGS, INC.
(DELAWARE CORPORATION)
1105 NORTH MARKET STREET, SUITE
1300

WILMINGTON, DE 19899, BY ASSIGN-
MENT, ASSIGNMENT AND ASSIGN-
MENT FROM TANATEX CHEMICAL
CORPORATION, THE (NEW JERSEY
CORPORATION) KEARNY, NJ

OWNER OF U.S. REG. NOS. 576,799,
603,173 AND 616,978.

FOR: COMPOUNDS INSTRUMENTAL
IN THE FIXATION OF COLORING
MATTERS UPON FIBRES—NAMELY,
DYEING ASSISTANTS AND LEVEL-
ING, EXHAUSTING, PENETRATING,
WETTING, AND DISPERSING AGENTS,
IN CLASS 6 (INT. CL. 1).

FIRST USE 3-3-1956; IN COMMERCE
3-3-1956.

SER. NO. 72-004,579, FILED 3-14-1956.

*In testimony whereof I have hereunto set my hand
and caused the seal of The Patent and Trademark
Office to be affixed on June 10, 1997.*

COMMISSIONER OF PATENTS AND TRADEMARKS

United States Patent Office

960,218
Registered June 5, 1973

PRINCIPAL REGISTER Trademark

Ser. No. 427,640, filed June 19, 1972

TANEMUL

Sybron Corporation (New York corporation)
1100 Midtown Tower
Rochester, N.Y. 14604

For: SURFACE ACTIVE CHEMICAL USED IN
TEXTILE SCOURING, in CLASS 6 (INT. CL. 1).
First use Sept. 18, 1962; in commerce Sept. 18, 1962.

Int. Cl.: 1

Prior U.S. Cl.: 6

United States Patent and Trademark Office

10 Year Renewal

Reg. No. 950,607

Registered Jan. 16, 1973

Renewal Term Begins Jan. 16, 1993

**TRADEMARK
PRINCIPAL REGISTER**

X-TAN

SYBRON CHEMICALS, INC. (DELA-
WARE CORPORATION)
P.O. BOX 66
BIRMINGHAM, ROAD
BIRMINGHAM, NJ 08011. ASSIGNEE OF
SYBRON CORPORATION (NEW YORK
CORPORATION) ROCHESTER, NY

FOR: BLEACHING ASSISTANTS AND
STRIPPING AGENTS FOR TEXTILE
FIBERS, IN CLASS 6 (INT. CL. 1).

FIRST USE 5-18-1962; IN COMMERCE
5-18-1962.

SER. NO. 72-403,441, FILED 9-23-1971.

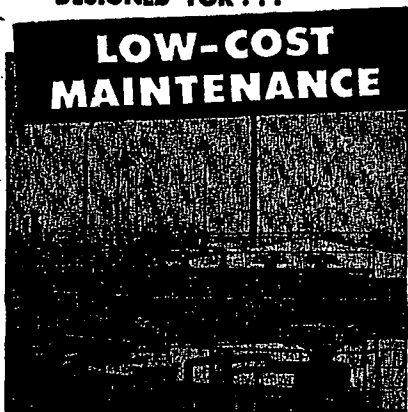
*In testimony whereof I have hereunto set my hand
and caused the seal of The Patent and Trademark
Office to be affixed on Mar. 16, 1993.*

COMMISSIONER OF PATENTS AND TRADEMARKS

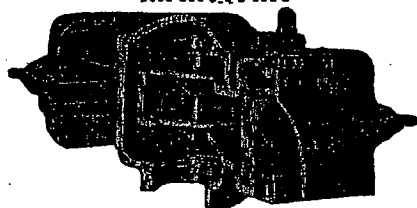


PROTECTOSEAL vapor conservation vents

DESIGNED FOR . . .



FULLY FIRE PROTECTIVE
SIMPLE and EASY to
MAINTAIN



Simplified, one-piece design locates flame arrester outside pressure-tight housing where it is easily accessible.

Vertical position of arrester permits condensate to drain off freely—prevents frequent "clog-ups" and prolongs operating time.

Modern "swing-bolts" permit quick removal of vent covers for visual inspection or removal of valves or arresters for cleaning.

Interchangeable arresters permit a spare to be inserted quickly and easily to safeguard tank while servicing original arrester.

Sturdy arrester plates resist distortion during cleaning and are self-positioning to assure correct air-space-gauging and safe reassembly to original Factory Inspection Standards.

Precision fabricated valves are processed to assure tight seatings, and are available as specified on order for other than normal pressure settings. Stream-lined design assures maximum air-flow capacities and self-drainage of condensate.



See our Exhibit—Booth C-38
Exposition of Chemical Industries
West Coast Warehouse, Los Angeles, Calif.
In Canada: Safety Supply Co., Toronto.

The Protectoseal Company
1952 So. Western Ave., Chicago 8, Ill.
Please send me "Venting Fundamentals"

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

Circle No. 102 A on Readers' Service Card, page 111 A

Literature

to indicate flow rate. The meter is available in two sizes: one uses 25 g.p.h. water or 103 s.c.f.h. of free air and the other uses 80 g.p.h. water or 330 s.c.f.h. of free air equivalent. Temperature rating is to 400° F. Fischer & Porter Co. 48

VACUUM GAGE. One- to four-station vacuum gage manufactured in Sweden is now available here. Gage is self-balancing, direct-reading, hot-wire type said to provide high degree of calibration stability. It will switch automatically from the millimeter range (100 to 0.1 mm. Hg) to the micron range (100 to 1 micron Hg) by means of a range-selection circuit. May be used with vacuum furnaces, stills, metallizers, dehydration units, and other vacuum processing equipment. Consolidated Engineering Corp. (Autovac). 49

VISCOMETER. Rotational viscometer is a high-speed, wide-range instrument for determining the viscosity, yield value, and thixotropic breakdown of highly viscous materials. It determines plastic viscosity in the range of 1 to 2500 poises, and yield values up to 180,000 dynes per sq. cm. Viscosity measurements are determined by consistency curves, rather than by the single-point method. Precision Scientific Co. 50

MANUFACTURERS' LITERATURE

CHEMICALS AND MATERIALS

ADDITIVE. 1 page. Data sheet describes properties and presents formulations for application of additive in bleaching and stripping of natural and synthetic materials. The Tanatex Corp. 51

ADHESIVE, EPOXY. 1 page. Technical data sheet gives specifications, properties, and curing cycles of one-part-paste, thixotropic, epoxy adhesive for bonding metals, plastics, and other rigid materials. Rubber & Asbestos Corp. (Bondmaster M880). 52

ADIPIC ACID. 8 pages. Bulletin on adipic acid covers six basic reactions of the carboxyl group and 11 basic reactions of the alpha methylene group and includes suggested uses for the chemical. Allied Chemical & Dye Corp. (Bull. I-18). 53

ALLOYS. 36 pages. Catalog covers heat- and corrosion-resistant fabricated alloy products, including furnace, salt bath, pickling, process, and plating room equipment. Rolook, Inc. (Cat. G-10). 54

AMINES. 52 pages. Catalog lists products, applications, chemical reactions, physical properties, storage and handling, and toxicology information. Sharples Chemicals. (Report 55-1). 55

BARIUM CADMIUM COMPOUND. 2 pages. Data sheet gives specifications, properties, and recommended uses for liquid barium cadmium compound, a heat and light stabilizer suited for poly(vinyl chloride) as well as copolymer resins. Advance Solvents & Chemical Corp. (Advastab X23-80). 56

BLUE TETRAZOLIUM. 3 pages. Data sheet describes physical properties and applications of tetrazolium salt for demonstration of oxidation-reduction enzyme systems, determination of ketol steroids, and reducing sugars. Dajac Laboratories. 57

BORON AND BORON CARBIDE. 16 pages. Handbook on boron and its stable compounds includes fundamental and commercial data useful for application in nuclear science. Norton Co. 58

BUILDING MATERIALS, INSULATIONS. 52 pages. Handbook contains descriptions of company's line of building materials, insulations, and allied industrial products and gives related engineering data. Johns Manville. 59

CARBON TETRACHLORIDE. 8 pages. Literature reviews toxicity of carbon tetrachloride. Chemicals & Materials Corp. 60

CAST IRON. 18 pages. Bulletin lists specifications for six classes of metallurgically controlled irons and also gives mechanical properties and tested applications. McNally Pittsburg Foundries, Inc. 61

CASTINGS, ALLOY. 3 pages. Bulletin describes physical characteristics and uses of wear-resistant castings and lists production facilities available. Coast Metals, Inc. 62

CATALYSTS, MOLYBDENUM. 24 pages. Booklet reviews existing commercial applications of molybdenum catalysts and discusses indicated uses shown by research and pilot plant work in dehydration, polymerization, and alkylation reactions. Climax Molybdenum Co. 63

CATALYSTS, PLATINUM. 12 pages. Study on effective reduction of constituents in petroleum feeds harmful for platinum catalysts. Minerals & Chemicals Corp. of America. 64

CHEMICAL PRODUCTS. 36 pages. Catalog covers more than 350 basic industrial, agricultural, and pharmaceutical chemicals, tabulating property and general use information. Dow Chemical Co. 65

COATING, ASPHALTIC. 4 pages. Bulletin describes properties of protective asphaltic coating compound for application to insulation, metals, and other building materials. Eagle-Picher Co. (Form A 590). 66

COATINGS, PLASTIC. 2 pages. Data sheet describes corrosion-resistant plastic coating, giving physical properties and listing chemicals against which it is particularly effective. Quelcor, Inc. (Data Sheet 75). 67

COATINGS, SPRAYED METAL. 4 pages. Illustrated bulletin discusses applications of sprayed metal coatings for contamination and corrosion protection when used alone and in combination with organic resin sealers. Metalweld, Inc. 68

COLOR PASTES. 7 pages. Bulletin covers range of calibrated color pastes for vinyl compounding, describing properties and methods of application and tabulating properties of each pigment in the series. Claremont Pigment Dispersion Corp. (Bull. 175). 69

CHEMICALS

► **Aqueous dispersion of calcium stearate (45%)** offered by Beacon Chemical Industries comes as thixotropic paste which company says can be readily diluted to any use concentration and which is applicable in most processes using calcium stearate which require (or can tolerate) the presence of water. Called Aquacel, compound allows applications for calcium stearate which water insolubility of powdered form has previously made impractical, says company. **C 5**

► **Heat resistant, medium impact phenolic molding material** developed by Borden's chemical division is designated HR-322. These properties, in general purpose material, should help meet growing need, says company. **C 6**

► **Floor patching material** developed by L. Sonneborn is described as especially-formulated nonbituminous powdered mixture which sets up in 30 minutes under normal drying conditions. Called Sonopatch, material is said to yield compressive strength of over 2000 lb. per sq. in. after a few hours and

ultimately to be capable of supporting loads of more than 10,000 lb. **C 7**

► **Two-coat heavy duty maintenance system** offered by Carboline produces total thickness of 12 mils. Compound, for use in severe corrosive environments, is called Phenoline 305 and can be applied over sandblasted or wire-brushed steel, wood, or concrete. **C 8**

► **Research Chemicals** is now offering complete line of rare earth oxides and salts. Selection of purities from 98 to 99.9% may be specified by the customer, says company. **C 9**

Get the LABORATORIES report



Convince yourself that

FLEXBOND 800

Copolymer Polyvinyl Acetate

Is Best for All-Around

Water-Base Paint Formulations

Recently, Daniel-Litter Laboratories, an outstanding independent laboratory for paint testing, ran a series of exhaustive tests on the leading water-base paint emulsions of all types. The paint formulations used were identical with those suggested in the manufacturers' technical literature. The emulsions and formulations selected for testing were those considered by the trade as the best available.

In test after test, conducted by this independent laboratory, Flexbond 800 Copolymer Polyvinyl Acetate Emulsion rated outstanding in these important properties: Film Integrity, Scrub Resistance, Sheen Uniformity, Easy Brushing and Package Stability. Flexbond 800 formulations were unique among all the interior emulsion paints tested in that they showed no negative features.

The Daniel-Litter Laboratories Summary Report is available for review with our representatives. Address Dept. B-6.



COLTON CHEMICAL COMPANY

A Division of Air Reduction Company, Inc. • 1747 Chester Avenue, Cleveland 14, Ohio

Sales Offices and Warehouse Facilities Throughout U. S.
EXPORT: Airco Company International, New York 17, N. Y.

► **Dye carrier** offered by Tanatex is said to eliminate completely carrier-spotting of Dacron and its blends. Company says Tanavol has all the advantages of phenolic carriers without the disadvantages. In addition to allowing one-step dyeings, maximum color yields, and light fastness, dyestuff adds are possible during prolonged processing. **C 10**

► **Seawater magnesia**, called Sea Sorb 43, is offered by Fisher Scientific in laboratory quantities. A product of Westvaco Chemical, compound is said to combine high surface area (120 square meters per gram), uniformly large pore size, and mechanical strength with high degree of basicity and an ionic crystal structure. Compound, says Fisher, is ideally suited for the carotene determination of hays and dried plants and has other uses in catalysis, chromatography, purification, refining, and decolorization. **C 11**

► **Activol 1357**, developed by Harry Miller Corp., is odorless, nonflammable, green liquid which company says dissolves instantly in all acids to give acid bath solution with exceptional detergent ability in batch, continuous, or spray pickling. **C 12**

► **Ninhydrin aerosol bombs** are offered by Pierce Chemical for spraying amino acid chromatograms. Company says they are more convenient to use than compressed air sprayers and will be furnished in various solvents and concentrations as demand warrants. **C 13**

► **Polyurethane foam and film stripper** offered by Surface Chemicals is noncorrosive solvent type stripper developed to promote the removal of polyurethane reaction products from ferrous and nonferrous metals. Applied by dip, flow coat, brush or spray. **C 14**

Further useful information on
keyed Chemical items men-
tioned is readily available...

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Balances. Descriptions and illustrations of line of laboratory balances. C. A. BRINKMANN & Co. L 2

Condenser. Diagrams and photographs of apparatus for condensing vapors independent of a large supply of cooling water.

Cups, Weight-per-Gallon. Features
and specifications of line of measuring cups
for specific gravity and weight-per-gallon
of liquids and pastes. Bulletin 146.
GARDNER LABORATORY, INC. L 6

Dye Carrier for Dacron. Description, dyeing mechanism, and formulations for use of Tavanol for nonspot dyeings of Dacron. **TANATEX CORP.** 18

Flexible Tubing. Description and specifications for Plica flexible tubing. Bulletin 61. THE FLEXANST CO. L 12

Forty-eight-page booklet contains complete texts of the papers presented at the series of Nitroparaffin Symposia held recently in New York, Chicago, and San Francisco. The papers deal with results of industrial research and process development work with nitroparaffins and their derivatives. **COMMERCIAL SOLVENTS CORP.** C-13

Plastic Products. Chemical, electrical, and mechanical properties of "Teflon" and

July 2, 1956

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CHEMICALS

Boost for Rockets

American Potash & Chemical has begun production of two new oxidants. The compounds, lithium perchlorate and lithium nitrate, will find their greatest use in high energy fuels applications—rockets and missiles. They may also be used in flares and other pyrotechnics.

The two new oxidants have a high oxygen content—on a weight basis lithium perchlorate has about 60% and lithium nitrate nearly 70%. It is this property that makes them of interest in the propellant field.

American Potash & Chemical already manufactures ammonium perchlorate and potassium perchlorate at its Henderson, Nev., electrochemicals plant. Its ammonium perchlorate is now widely used as the oxidizer in rockets and missiles. **C 1**

Vinyl Acetate Solutions

Cellofilm Industries is in full-scale production of what it claims to be a complete range of vinyl acetate solutions. The company says the solutions are offered in any and all solvent formulations.

Cellofilm, a leading producer of nitrocellulose base solutions, says greatly increased facilities permit its entry into the field. The company says its volume production should allow many users to obtain the solutions they require without the problem of "broken" packages. Also, Cellofilm says it can offer prices that compete with those of users who now cut their own. The company says it uses Shawinigan resins in all its formulations. **C 2**

► **Surface-active, adsorptive form** of practically pure silica in a skeleton form is offered by Permutit for use as a general, economical adsorbent. Company says Permutit LG shows excellent regeneration, good capacity, and good scrubbing efficiency for organic compounds from vapors. Also compound has high settling velocity, high crushing strength, and excellent temperature resistance. Material is offered in mesh sizes 30 to 50 mesh and is easily ground to pass 200 mesh. **C 3**

► **Flocculating agent** by B. F. Goodrich, Good-rite K-720, causes rapid and thorough aggregation of finely divided particles present in coal washing water. Company says this results in fast set-

ting, easily dewatered slurries, clearer overflow, and greater thickener capacity. As little as 1 pound of Good-rite K-720 treats up to 300,000 gallons of coal slurry, says company, demonstrating its efficiency. **C 4**

► **New line of tinting colors** by Craftint is designed to replace its Colors-in-Oil. The new Universal colors blend equally well with alkyd semigloss and flat, oleoresinous, latex and acrylic, as well as PVA bases, says company. Test samples are offered by the company to paint manufacturers. **C 5**

► **Dyeing of "difficult" synthetics** will be simplified by a new carrier, says Tanatex. Called Carolid, the carrier is said to go into true solution, eliminating danger of spotting. Developed specifically for dyeing of Dacron and its blends, the carrier is effective in dyeing of Arnel, Darlan, dynel, Verel, and other synthetics, says company. **C 6**

► **Silicone rubber** for wire insulation is offered by General Electric's silicone products department. SE-975 wire insulation can be used at 150° C. for long service and at 200° C. for many applications, says company. Intermittent exposure at 250° C. is possible. SE-975 is furnished as a white compound which may be tinted to obtain wide range of colors. **C 7**

► **Potassium penicillin G USP** in granular form is being marketed in bulk by Chas. Pfizer for use in penicillin tablet manufacture. Price and packaging of the new product will be the same as for other nonsterile forms of potassium penicillin, company says. **C 8**

► **Vinyl enamel coating** by Wooster Finishes can be applied to machinery without stopping work schedules, company says. New plastic emulsion, called Wooster Vinyl Enamel, is said to be nonflammable during application and fire-resistant when dry. Enamel is offered in seven colors and forms hard, glossy finish that resists effects of oil, grease, fumes, moisture, and mild acids. **C 9**

► **Adhesive Products** has introduced another of its Polygriptex packaging adhesives. This time it's No. 3679-H Polygriptex. Compound may increase use of polyethylene in packaging, says company, for with its use polyethylene adheres to paper and chip or kraft board as easily as cellophane. No. 3679-H can also be used to stick labels

to polyethylene squeeze bottles and containers. **C 10**

► **Two phenolic molding compounds** by General Electric can be used to produce parts which withstand boiling water and over-hot temperatures. G-E 12980 yields satin-finished parts, says GE, that withstand temperatures up to 500° F. It can be molded under temperatures ranging from 300° to 370° F., using standard molding pressures. A second compound, G-E 12981, resists temperatures up to 400° F. This compound is designed for use in circuit breakers, cord connectors, and thermostat knobs. **C 11**

► **New organic thickener** incorporated in Standard Oil's (Ind.) Rykon line of greases is said to make greases more stable than previously used gelling agents. Company says field tests on Rykon greases prove the new products remain grease-like and give lubrication at high temperatures over long periods. The greases are resistant to water and oxidation, have an ASTM dropping point of 480° F. Four regular and three extreme pressure grades are offered under Rykon trade name. **C 12**

► **Indicator** introduced by J. T. Baker Chemical permits the direct EDTA titration of calcium at a pH above 12, even in presence of magnesium. Company says Calcon, the sodium salt of 1-(2-hydroxy-1-naphthylazo)-2-naphthol-4-sulfonic acid, gives an excellent end point color change from red to blue. **C 13**

► **Two new easily emulsifiable waxes** have been added to Aerogon Chemical's Aerok E series. Called Aerok E-24 and E-60, the waxes have acid values of 40 and 60, respectively. Both emulsify easily without addition of fatty acids as part of the emulsifier system, company says, and have outstanding ability to carry inert hydrocarbons, silicones, pigments, solvents, and other hard-to-emulsify materials into aqueous systems. **C 14**

► **Thixotropic vinyl toluene copolymer** just developed by Spencer Kellogg is designed for use in flat interior wall paints. Keltrol 1059 is described as offering controlled thixotropy resulting in easy workability and freedom from separation and hard settling. It is also said to provide nonpenetration and color uniformity. **C 15**

Further useful information on
keyed Chemical items men-
tioned is readily available...

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Industrial Chemical Specialties

Companies added these products to their lines during the past four weeks

<i>Material</i>	<i>Company</i>	<i>Suggested Uses Include</i>
Adhesive, (Polygriptex 3679-H)	Adhesive Products New York City	Packaging adhesive
Waxes, (Aerok E-24, E-60)	Aerogon Chemical New York City	Emulsifying agents
Herbicide, (HCA Weed Killer)	Allied Chemical & Dye New York City	Single application herbicide for Johnson, Bermuda, other weed grasses
Corrosion inhibitor, (2508)	Armour, Chicago, Ill.	For sulfuric, sulfamic, phosphoric acids used in metal treating
Indicator, (Calcon)	J. T. Baker Chemical Phillipsburg, N. J.	For EDTA titration of calcium
Cleaner, (Pinnacle)	Calgon, Pittsburgh, Pa.	Manual cleaning agent for industrial and commercial use
Vinyl acetate solutions	Cellofilm Industries Woodridge, N. J.	Offered in all solvent formulations
Coating, (Flexbond 100)	Colton Chemical Cleveland, Ohio	Textile and paper coatings, adhesives, saturants
Wax, (Co-Wax)	Concord Chemical Camden, N. J.	Gives stable carnauba-type water-wax emulsions when added to hot water
Chromate coating, (Kenvert No. 18)	Conversion Chemical Rockville, Conn.	Gives iridescent films on zinc, cadmium, brass, copper, and zinc die castings
Tinting colors	Craftint, Cleveland, Ohio	For alkyd, oleoresinous, latex, acrylic, PVA bases
Mold and rope inhibitors, calcium and sodium propionate	Eastman Chemical Products Kingsport, Tenn.	For baking industry, inhibiting agents in leather, tobacco, dairy products
Detergent-inhibitor, (Paranox 302)	Enjay New York City	For low temperature stop-and-go automotive service, high temperature Diesel service
Phenolic molding compounds, (GE 12980, 12981)	General Electric Pittsfield, Mass.	For high temperature applications
Coating, 16-ounce pressure pack, (Glyptal)	General Electric Schenectady, N. Y.	Corrosion resistant coating for metal
Silicone rubber, (SE-975)	General Electric Waterford, N. Y.	For wire insulation
Flocculating agent, (Good-rite K-720)	B. F. Goodrich, Cleveland, Ohio	Treats coal washing water
Polyethylene, Ziegler process	Hercules Powder Wilmington, Del.	Plant growth promoter
Gibberellic acid, tablet form (Nitra-Tone)	Nitragin Milwaukee, Wis.	Forms stable, nonsettling, aqueous dispersions
Talc dispersant (Nopco Dispersant No. 2)	Nopco Chemical Harrison, N. J.	Adsorbent
Silica, (Permutit LG)	Permutit, New York City	For flat interior paints.
Vinyl toluene copolymer, (Keltrol 1059)	Spencer Kellogg, Buffalo, N. Y.	For rigid and semirigid vinyl chloride polymers and copolymers
Acrylic modifier, (Acryloid KM-220)	Rohm & Haas, Philadelphia, Pa.	For printing ink, plastics, rubber
Red pigment, (Polaris Red CP-1285)	Shervin-Williams, Chicago, Ill.	For Dacron and other synthetics
Dye carrier, (Carolid)	Tanatex, Kearney, N. J.	
Nickel stripper, (Ni-Plex)	United Chemical Providence, R. I.	
Cotton defoliant, (Folex)	Virginia-Carolina Chemical Richmond, Va.	
Brightener, (Iso-Brite ZB 567)	Wagner Bros., Detroit, Mich.	For zinc plating baths
Vinyl enamel coating (Wooster Vinyl Enamel)	Wooster Finishes Wooster, Ohio	Nonflammable coating for machinery
Textile softener, silicone (Zacone)	Zimmerman Associates Guilford College, N. C.	For textile and related trades

Available in commercial quantities unless otherwise noted.

CHEMICALS

Material	Company	Suggested Uses Include
Scotchgard stain repeller	Minnesota Mining & Mfg. St. Paul, Minn.	Textile finish to repel stains
Ethylene-maleic anhydride copolymer (DX 840)	Monsanto Chemical Springfield, Mass.	Films, polymers, waxes
Potassium dichloroisocyanate (ACL-59)	Monsanto Chemical St. Louis, Mo.	Dry bleach and sanitizer
Silane-modified phenol-formaldehyde resin (Resinox SC-1013)	Monsanto Chemical St. Louis, Mo.	Radlomes and other high temperature uses
Resin copolymer (Resyn 78-3010)	National Starch & Chemical New York, N. Y.	After-spray permanence of aerosol hair preparations
Liquid detergent (Liqui-Det #2)	Oakite Products New York, N. Y.	Cleaning in food plants
Epoxy-based coating (PG-1013)	Permagine Woodside, N. J.	Skid-proofing and protective coating for concrete floors
Nonfoaming anionic surfactant	Petrochemicals Long Beach, Calif.	Mechanical dishwashing and steam cleaning compounds
Cis-4 rubber	Phillips Chemical Bartlesville, Okla.	Tires. Available in 5000-lb. lots minimum
Latex paint	Pittsburgh Plate Glass Pittsburgh, Pa.	Concrete floors and walls
Resin solvent	Resin Consultants & Mfg. New York, N. Y.	Salvage potted electronic components
Silicone mold release agent	Resin Consultants & Mfg. New York, N. Y.	Mold release for epoxies and polyesters
Rubbatax polyethylene adhesive	Rubba, Inc. New York, N. Y.	Sticking paper labels to polyethylene containers
Greenish yellow disperse dye, Jet black vat dye	Sandoz, Inc. New York, N. Y.	Dyeing
Microcrystalline waxes (Multiwax 200 and Sonowax 3450)	L. Sonneborn Sons New York, N. Y.	Floor polish, crease-resistant fabrics
Polyethylene resins (Poly-Eth 5155, 5165, and 5175)	Spencer Chemical Kansas City, Mo.	Extrudable to blown or flat film
Hydraulic fluid	Sun Oil Philadelphia, Pa.	Fire resistant, high temperature uses
Anionic surfactant (Levopal)	Tanatex Chemical Kearny, N. J.	To level dyeings on polyester fibers
Solvent-free surfactant (Tanapon X-70)	Tanatex Chemical Kearny, N. J.	Preparing goods containing polyester fibers
Copper-clad, paper based epoxy laminate (XY-1 Cu-Clad)	Taylor Fibre Norristown, Pa.	Printed circuitry
Epoxidized soybean oil and 2-ethylhexyl epoxy tallate	Union Carbide Chemicals New York, N. Y.	Plasticizers for vinyl formulations
Simplex ferrochrome	Union Carbide Metals New York, N. Y.	Stainless steel
Klerzyme fruit enzyme	Wallerstein Co. Staten Island, N. Y.	Processing fruit juices and wines

Available in commercial quantities unless otherwise noted.

► **Dodecylbenzyl chloride**, an intermediate for making cationic and non-ionic detergents, is now commercially available from Continental Oil, Houston, Tex. The product has a minimum active ingredient content of 90%. **C 7**

► **Isodecanoic acid**, a mixture of methyl substituted, 10-carbon, aliphatic, monocarboxylic acids with little alpha substitution, is now available from Union Carbide Chemicals, New York City. Principal isomers are trimethylheptanoic and dimethyloctanoic acids. Among the potential uses for the mixture and its derivatives: plasticizers

and stabilizers for polyvinyl chloride resins, alkyd resin modifiers, fungicides, detergents, agricultural chemicals. **C 8**

► **Green liquid dye** for paper (Green HX Liquid) has been added to its line by American Cyanamid, New York City. It can be added to preparation water or directly to the mixing chest, the company says. **C 9**

► **Granulated oil red dye** has been developed by American Cyanamid, New York City, for coloring gasoline. The new product is nondusting, noncaking, and "very soluble" in gasoline, the company says. **C 10**

► **DNP amino acids** are now available in two kits from Mann Research Laboratories, New York City. These acids are useful in study of amino acid sequence and many biochemical phenomena, MRL says. One kit has 18 DNP amino acids, the other has 12; there are 100 mg. of each material in each kit. **C 11**

Further useful information on keyed Chemical items mentioned is readily available...

Use handy coupon on page 58





AGREEMENT made on April 23, 1963, between

1963 MAY 6 AM 9 17 1963 APR 25 AM 8 38
THE TANATEX CHEMICAL CORPORATION, a corporation of the State of New Jersey, U.S.A., having a place of business at Belleville Turnpike, Kearny, New Jersey, hereinafter sometimes called "TCC", and

TANATEX CHEMICAL (HOLLAND) N.V., a corporation of Holland, having a place of business at Amsterdam, Kleine Gartmanplantsoen 21, hereinafter sometimes called "TCH".

WHEREAS, TCC owns certain inventions, secret processes, trade-marks and trade-names as to chemical products hereinafter mentioned; and

WHEREAS, TCH is in the business of manufacturing and selling chemical products in Europe and elsewhere;

NOW, THEREFORE, in consideration of the mutual promises and covenants herein contained, the parties agree as follows:

1. SALE AND PURCHASE. TCC sells to TCH and TCH purchases from TCC all of the intangible assets of TCC as to the manufacture of the products listed in Schedule A, attached hereto and made a part hereof, including all rights to manufacture, sell and use said products, inventions, secret processes, trade-marks and trade-names as so limited, as more particularly set forth in Paragraph 2 hereof, limited, however, to the territory described in Paragraph 3 hereof.

2. DESCRIPTION and DELIVERY.

A. TCC shall forthwith, upon the execution of this agreement, deliver to TCH the formulas, including inventions and secret processes, for the manufacture of each of the products listed on Schedule A, which formulas shall consist of the complete details of the manufacture of each product including, but not limited to, a statement of the components of each product, the quantities of each component required, the method of fabricating the product, complete description of any special machinery necessary to the fabrication, and such other data as shall reasonably be required by TCH to enable it to manufacture the product.

B. TCC hereby sets over, assigns and sells to TCH full ownership in the following names, as to which TCC has perfected United States trade-marks: TANAVOL, TANALID, TANALUBE, CAROLID, CELLOLUBE, TANALON, TANATERGE and PREELUBE, and to all other trade-names listed on Schedule A, limited, however, to the territory set forth in Paragraph 3 hereof. TCC shall fully cooperate with TCH in obtaining such trade-mark or other registrations as TCH may desire for any or all of said names in the territory set forth in Paragraph 3 hereof.

Handwritten signature or initials, possibly "S. S. S.", located in the bottom left corner of the document.

3. TERRITORY. The sale and purchase covered by this agreement is limited to Europe, excluding Turkey and the British Isles.

4. REPRESENTATIONS OF SELLER (TCC).

A. It has the right to sell all of the assets described in Paragraph 2 to TCH. It has received no notices to the effect that any of the products listed on Schedule A violate any United States or foreign patents held by anyone and it knows of no such infringement. It is, however, specifically agreed between the parties that TCC shall not be liable to TCH in the event it develops that any of the aforesaid products violate any present or future patent.

B. It has not heretofore sold any of the assets described in Paragraph 2, as to the territory set forth in Paragraph 3, to any person, firm or corporation and it has not given to any person, firm or corporation any agency, license or other right which would in any way conflict with the full use and enjoyment of the ownership of such assets by TCH in the described territory.

C. It has not heretofore disclosed any of the formulas (including inventions and secret processes) to any person, firm or corporation, except to employees engaged in manufacture, and, to the best of its knowledge, information and belief, said formulas are known to no one who is in a position to interfere with the full use and enjoyment of the ownership of such assets by TCH in the described territory.

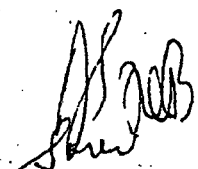
D. It has registered the following trade-marks in the United States patent office: TANAVOL, TANALID, TANALUBE, CAROLID, CELLOLUBE, TANALON, TANATERGE and PREELUBE.

E. To the best of its knowledge, information and belief, no other person, firm or corporation has used any of the trade-names listed in Schedule A as to which United States trade-mark registration has not been obtained.

5. COVENANTS OF SELLER (TCC).

A. It will not disclose any of the formulas (including inventions and secret processes) described in Paragraph 2 to any person, firm or corporation for the purpose of interfering with the full use and enjoyment of the ownership of such formulas by TCH in the territory described in Paragraph 3.

B. In the event that it shall sell any of the assets described in Paragraph 2 hereof to others for use in territories other than as set forth in Paragraph 3, it shall secure reasonable assurances that said assets shall not be used in such a manner as to interfere with the use and enjoyment of the ownership of the assets by TCH in the described territory.





C. It will fully cooperate with TCH in protecting the ownership rights of TCH in the assets sold hereunder, including providing testimony and other evidence in any court or other forum as may be required by TCH. Any expenses incurred by TCC under the terms of this Paragraph 5C shall be promptly reimbursed by TCH, unless the said ownership rights of TCH have been violated by any party acting under a grant of right from TCC.

D. It will provide such writings or other proofs as TCH may reasonably require to enable TCH to secure such patent, trade-mark or other protection by registration as to any of the assets sold hereunder.

E. It will perform no acts which will in any way interfere with the full use and enjoyment of ownership rights by TCH of the assets sold in the territory described in Paragraph 3.

F. It will not sell, or knowingly cause others to sell, any of the products listed in Schedule A in the territory described in Paragraph 3 hereof.

6. REPRESENTATIONS OF PURCHASER (TCH).

A. It is in the business of manufacturing and selling chemical products.

B. There is nothing in its corporate charter or by-laws which in any way preclude it from entering into the full performance of the terms of this agreement.

C. It is purchasing the assets described in Paragraph 2 for the purpose of manufacture, distribution, exploitation, sale and use within the territory described in Paragraph 3 and for no other purpose.

7. COVENANTS OF PURCHASER (TCH).

A. It will not disclose any of the formulas (including inventions and secret processes) described in Paragraph 2 to any person, firm or corporation for the purpose of manufacture, distribution, exploitation, sale or use outside of the area described in Paragraph 3 hereof.

B. In the event that it shall sell any of the assets described in Paragraph 2 to others or license others to use, manufacture or sell such assets, within the territory described in Paragraph 3 hereof, it shall secure reasonable written assurances from the purchaser or licensee that such assets will not be used for the purpose of manufacture, distribution, exploitation, sale or use of any of the products listed in Schedule A outside of the territory described in Paragraph 3.

Handwritten signature or initials.

C. It will fully cooperate with TCC in protecting the ownership rights of TCC in the intangible assets of TCC not sold hereunder, including providing testimony and other evidence in any court or other forum as may be required by TCC. It will obtain from each of its employees or agents who may have reason to obtain knowledge of any of the formulas for the products listed in Schedule A undertakings in writing containing reasonable assurances that such employees will not disclose said inventions or secret processes to any person, firm or corporation for the purpose of enabling such person, firm or corporation to manufacture, distribute, exploit, sell or use any of said products outside of the territory set forth in Paragraph 3 hereof.

D. It will obtain trade-marks and/or other protections reasonably necessary to insure its ability to fully exploit the assets sold hereunder.

E. It will not sell any of the products set forth in Schedule A outside of the territory described in Paragraph 3.

8. PURCHASE PRICE. The purchase price is Hfl 2,500,000.-- (two-million-five-hundred-thousand Guilders) to be paid as set forth in Paragraph 9 hereof.

9. PAYMENT. The purchase price shall be paid as follows:

A. On the signing of this agreement, Hfl 75,000.--
(seventy-five-thousand Guilders)

B. Annual installments, the amount of which is to be computed for each calendar year commencing with 1963 by taking the sum of the following:

(1) 20% of the gross profit of TCH for the preceding year on sales of products listed in Schedule A attached hereto.

(2) For the purposes of this Paragraph 9B, gross profit shall be the difference between the off plant sales price less the sum of any turnover tax, discounts, rebates, bonuses or similar payments and costs of raw materials, containers and other direct manufacturing costs.

(3) The full amount of any monies received by TCH during the preceding calendar year for the sale or license by it of any of the items described in Paragraph 2 hereof.

C. Each annual installment shall be estimated by TCH no later than thirty days after the end of each calendar year and notice in writing of the estimated amount of said annual payment shall be forwarded to TCC together with payment of 75% of said estimated amount. Full payment shall be made as soon as the final figures for the year have been completed by



TCH but no later than 120 days after the end of each calendar year.

D. No payments shall be made in accordance with the formula set forth above after the full sum of Hfl 2,500,000.-- has been paid.

E. Representatives of TCC, authorized by it in writing, shall have the right to examine the books of TCH at any time during business hours for the purpose of verifying the amount of payments due to TCC hereunder. No more than three such examinations may be made in any one year.

10. DEFAULT. In the event of any default by TCH, or the bankruptcy or dissolution of TCH before the payment of 50% of the sale price due in accordance with the provisions of Paragraph 8, TCC shall, without the interference of any court or other governmental agency, be released from the covenants contained in Paragraph 5 hereof and shall, in addition, retain all other remedies available to it by reason of breach of this agreement.

11. TECHNICAL SERVICES and IMPROVEMENTS. This agreement is for the sale of presently existing assets only and TCC shall be under no obligation to furnish TCH with information or data relating to improvements on the products listed in Schedule A. Nor shall TCC be obliged to furnish any technical services to TCH as to the manufacture or sale of any of the assets described in Paragraph 2, except as may be necessary to complete the disclosure of any inventions or secret processes.

12. FURTHER ASSURANCES. The parties agree to execute such additional documents as may be necessary to complete performance of the terms of this agreement.

13. RESERVE RIGHTS. TCC reserves the right to sell and/or license the use of any of the assets described in Paragraph 2 or any of the products set forth in Schedule A anywhere in the world, except the territory described in Paragraph 3.

14. INTEGRATION.

A. This instrument is the entire agreement between the parties and there are no representations not specifically set forth herein.

B. No modification of this agreement shall be effective unless in writing signed by the parties.

C. This agreement supersedes all prior agreements between the parties, oral or in writing.

JSAB
Sw

15. ARBITRATION. In the event that any dispute shall arise under the terms of this contract, or as to its interpretation, the parties shall submit such dispute to the American Arbitration Association, whose decision shall be final and binding upon the parties.

16. LANGUAGE. The official language of this agreement shall be English and copies in any other language shall not be official.

17. LAW. This contract shall be construed according to the laws of Holland.

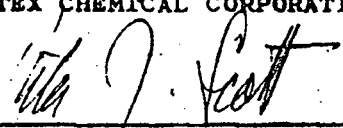
18. ASSIGNMENT. Neither party may assign this agreement without the consent in writing of the other party.

19. BINDING EFFECT. This agreement shall be binding upon the parties, their successors and assigns.

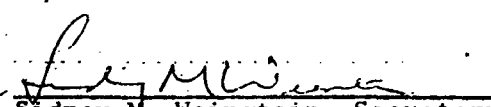
IN WITNESS WHEREOF the parties have caused these presents to be signed by their proper corporate officers and caused their proper corporate seals to be affixed on the day and year first above written.

THE TANATEX CHEMICAL CORPORATION

BY


Peter J. Scott, President

ATTEST:


Sidney M. Weinstein, Secretary

TANATEX CHEMICAL (HOLLAND) N.V.

BY


Henry L. Barentz, President



SCHEDULE A

1. AFA 475N
2. Amine Condensate B-1706
3. Amine Condensate B-5091
4. Ammonium Lactate 61%
5. Antiox C
6. Carolid
7. Carolid ELF-C
8. Carolid FLM
9. Caust-Aid NF
10. Caust-Aid NF Conc. II
11. Cellolube
12. Cellolube CWS
13. Cellolube CWSB
14. Cellolube FDN
15. Cellolube Q-2
16. Cellolube QN
17. Cellolube XX
18. Cellolube XZ
19. Cellolube 210
20. Cellopal D
21. Cellopal 100
22. Chemocarrier HT
23. Chemocarrier KD5W
24. Chemocarrier P
25. Corrosion Inhibitor H
26. Cyclan 55
27. DS-12
28. DS-14
29. Dyeweld
30. Emulsifier ELF-C
31. Emulsifier ELG
32. Emulsifier IM Conc.
33. Emulsifier No. 10
34. Emulsifier No. 17
35. Emulsifier No. 18
36. Lanone
37. Lanone Special
38. Liquid Carolid 50%
39. Merce-Assist A
40. Merce-Assist F
41. Merce-Assist H
42. Merse 7F
43. Nylon Finish P
44. Plexene XX
45. PMC-Base
46. Reactassist B
47. Retarder A
48. R-2104D
49. Tanadel IM
50. Tanalene M
51. Tanalene 200
52. Tanalid Clear 001
53. Tanalid 004
54. Tanalid 004 Base
55. Tanalon
56. Tanalon Base
57. Tanalon CPC
58. Tanalon D
59. Tanalon ELG
60. Tanalon PO
61. Tanalon Special
62. Tanalube C-Base
63. Tanalube T-Base
64. Tanapal B
65. Tanapal ME
66. Tanapal ME Acid
67. Tanapal 100
68. Tanapon CD
69. Tanapon GEL
70. Tanapon X-50
71. Tanapon X-100
72. Tanapon XAN
73. Tanapon X-600
74. Tanaquad T-85
75. Tanaterge DCP
76. Tanaterge M
77. Tanaterge 9B
78. Tanaterge 9B-Base
79. Tanaterge 43
80. Tanaterge 43 Conc.
81. Tanaterge 100-L
82. Tanavol
83. Tanavol Conc.
84. Tanavol 4M
85. Tanavol XC
86. Tanawax D
87. Tanemul C
88. Tanemul D
89. Tanemul F
90. Tanemul F-Base
91. Tanemul VE
92. Tanemul 0635
93. Tanemul 0636
94. Tanemul 0646
95. Tanemul 0644
96. Tanemul 0649
97. X-Tan Assist

Handwritten signature or initials, possibly "KraB".

Exhibit O



Comparative Profit and Loss Statement

Page 1

in \$M units

Fiscal Year Ended 4/30/63			LINE	Fiscal Year Ended 4/30/63		
Details	Variable	Fixed		Group Totals		\$
	1955.2		1	Sales	100.0	1955.2
	911.8		2	Raw Materials (1) & Frt. In.	47.0	919.1
	1044.2		3	Raw Gross Profit w/o OH	53.0	1036.1
			4	Overhead Difference (2)	.4	8.1
	1044.2		5	Raw Gross Profit	53.4	1044.2
			6			
			7	Manufacturing		
69.4	38.5	30.9	8	Salaries (1.1)		
3.2	3.2		9	Temporary Labor		
69.1	69.1		10	Containers Used		
3.7	3.7		11	ELF Heaters		
14.5	14.5		12	Utilities		
5.8		5.8	13	Plant Suppl. & Factory Exp.		
.6		.6	14	Plant Safety Program		
			15	Rental, Repairs & Maint:		
1.3		1.3	16	Plant Equip.		
1.1		1.1	17	Lift Trucks		
9.7		9.7	18	Dep'n - Plant Equipment		
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
(2.0)		(2.0)	27			
			28	Reimbursed Mfg. Costs		
			29	Manufacturing	9.0	176.3
			30			
			31	Shipping		
11.9		11.9	32	Salaries (2)		
47.6	47.6		33	Freight Out		
3.2	1.6	1.6	34	Warehousing		
2.4	2.4		35	Shipping Suppl. & Exp.		
.9		.9	36	Truck Expenses		
1.7		1.7	37	Dep'n - Truck & Ship. Equip.		
			38			
			39			
			40			
			41			
			42			
			43			
			44			
			45			
			46	Shipping	3.5	67.7
			47			
			48	Salesmen		
91.1	37.0	54.1	49	Salaries & Commissions (5)		
18.0	18.0		50	Commission Agents		
15.3		15.3	51	Expenses		
5.4		5.4	52	Auto Expenses		
4.3		4.3	53	Dep'n - Autos		
3.6		3.6	54	Holiday Expenses		
2.0		2.0	55	Conventions		
			56	Sales Expense		
			57			
			58			
			59			
			60			
			61			
			62			
			63			
			64			
			65			
			66	Salesmen	7.1	139.7
			67			
15.6		15.6	68	Advertising	.8	15.6
			69			
			70			
			71			
			72			

(1) = Number of Employees (1) Raw Material Cost of Goods Sold

Net. Labor & Overhead in Beginning & Ending Finished Goods Inventory

Page 2

in \$M units

CONFIDENTIAL STATEMENT FORM FD-313 LITHO IN U.S.A. MAYBEN-CRAFT KALAMAZOO, MICH.

Comparative Profit and Loss Statement

in \$M units

Fiscal Year Ended 4/30/63			Fiscal Year Ended 4/30/62	
Details	Variable	Fixed		
13.9	13.9		1 Sales Discounts	
9.2	9.2		2 Bad Debts	
.3		.3	3 Amortiz - Patents & Tr. Marks	
7.0		7.0	4 Telephone	
13.3		13.3	5 Insurance	
9.2		9.2	6 Legal	
18.3		18.3	7 Accounting	
.3		.3	8 Tuition Costs - Employees	
.8		.8	9 Travel	
.5		.5	10 Custodian Fees - PSP	
3.8		3.8	11 Employee Life & Med. Ins.	
11.6		11.6	12 Payroll Taxes	
.8		.8	13 Miscellaneous Taxes	
3.8		3.8	14 Miscellaneous Expense	
			15 Miscellaneous P & L Items	
1.0	1.0		16 Res - Contingent Litigation	
1.8		1.8	17 Res-Accumulated Sick Leave	
			18	
15.0		15.0	19 Consultation - Chem. Engr.	
			20	
			21	
			22	
			23	
			24	
			25	
			26	
			27	
			28	
			29	
			30	5.7
			31	110.6
			32	
(1.6)	(1.6)		33 Other Income	
(3.3)		(3.3)	34 Purchase Discounts	
			35 Interest	
			36 Gain on Formulae Sale	
			37	
			38	
			39	
			40	
			41	
			42	
			43	
			44	
			45	
			46 Other Income	(.3)
270.1		563.1	47	(4.9)
774.1		40.0 %	48 Profit Before Fixed Items	42.6
563.1			49 Less, Fixed Items	833.2
211.0		10.8 %	50 Profit Before PSP, Charity, Taxes	
8.8			51 Charity	211.0
35.6	44.4		52 Profit Sharing Plan	
	166.6	8.5 %	53 Profit Before Taxes	
	86.8		54 Taxes	
	79.8	4.1 %	55 Net Profit	
			56	
			57	
			58 Monthly Sales Required	
			59 to Break Even	
			60	
			61	
			62	
			63	
			64	
			65	
			66	
			67	
			68	
			69	
			70	
			71	
			72	

THE TAMATEX CHEMICAL CORPORATION

Comparative Balance Sheet

in \$M units

			4/30/63	
1	Assets			
2				
3	Current Assets			
4	Cash on hand and in banks		216.6	
5	Note receivable		2.0	
6	Accounts receivable	211.0		
7	Less est. uncollectable	11.8	199.2	
8	Due from TCH-formulae sale		30.6	
9	Deposits rec. on containers		2.9	
10	Inventories:			
11	Raw materials	101.4		
12	Finished goods w/o OH	90.2		
13	Overhead in finished goods	16.5		
14	Containers	25.2	233.3	
15	Miscellaneous receivables		6.6	
16	Advances to employees		1.4	
17	Prepaid expenses		14.0	
18	Accrued income		2.9	
19				
20				
21				
22				
23				
24				
25				
26				
27				709.5
28	Total Current Assets			
29				
30	Fixed Assets			
31	Furn., mach. and equipment	104.2		
32	Less depreciation to date	57.8	46.4	
33	Automobiles and truck	31.2		
34	Less depreciation to date	18.3	12.9	
35	Improvements to leasehold	37.8		
36	Less depreciation to date	32.9	4.9	
37	Land and building	175.8		
38	Less depreciation to date	14.3	161.5	
39				
40				
41				
42				
43	Total Fixed Assets			225.7
44				
45	Other Assets			
46	Security deposits		3.9	
47	Cash value - life insurance		21.2	
48	Note receivable		10.6	
49	Due from TCH - formulae sale		665.2	
50	Trademarks (less amortiz.)		2.0	
51	Patents & applications(net)		3.6	
52	Organization expense		1.9	
53				
54				
55				
56				
57				
58				
59				
60	Total Other Assets			708.4
61				
62	Investments			
63	Investment in affiliate		19.0	
64				
65				
66				
67	Total Investments			19.0
68				
69				
70				
71	Total Assets			1662.6
72				

THE KALAMAZOO COMPANY
Comparative Balance Sheet

in \$M units

		6/30/63	
1	Liabilities and Capital		
2			
3	Current Liabilities		
4	Accrued salaries and wages	3.5	
5	Withheld & acc'd p/r taxes	6.7	
6	Acc'd US corp income taxes	90.8	
7	Acc'd state fr & inc taxes	5.4	
8	Employee contrib to PSP-WH	1.6	
9	Acc'd profit sharing contrib	35.6	
10	Note payable to Prudential	18.0	
11	Accounts payable	104.5	
12	Deposit & exchange payable	.1	
13	Accrued expenses	32.3	
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28	Total Current Liabilities		298.5
29			
30	Long-term Liability		
31	Note payable to Prudential	207.0	
32			
33			
34	Total Long-term Liability		207.0
35			
36	Deferred Credit to Income		
37	Unrealized inc-formula sale	695.8	
38			
39	Total Def Credit to Income		695.8
40			
41			
42			
43			
44	Capital & Retained Earnings		
45	Capital Stock:		
46	Common - 886 shares	10.3	
47	Preferred, 8% cum, 50 sh	5.0	
48	Preferred, 8% non-cum, 2 sh	.2	
49			
50			15.5
51			
52	Donated Capital		33.8
53			
54	Retained Earnings:		
55	Non-Reserved:		
56	Beginning	330.0	
57	Plus, Profit	79.8	
58	IRS Adj.	6.2	
59			
60	Less, Dividends	(.7)	
61	Life Ins. Adj.		
62	FIT 60-61-62	(11.6)	
63	Ending	403.7	
64	Reserved:		
65	Contingent Litigation	4.9	
66	Accumulated Sick Leave	3.4	
67			
68		8.3	412.0
69	Total Cap & Ret Earnings		461.3
70			
71	Total Liabilities & Cap.		1162.6
72			

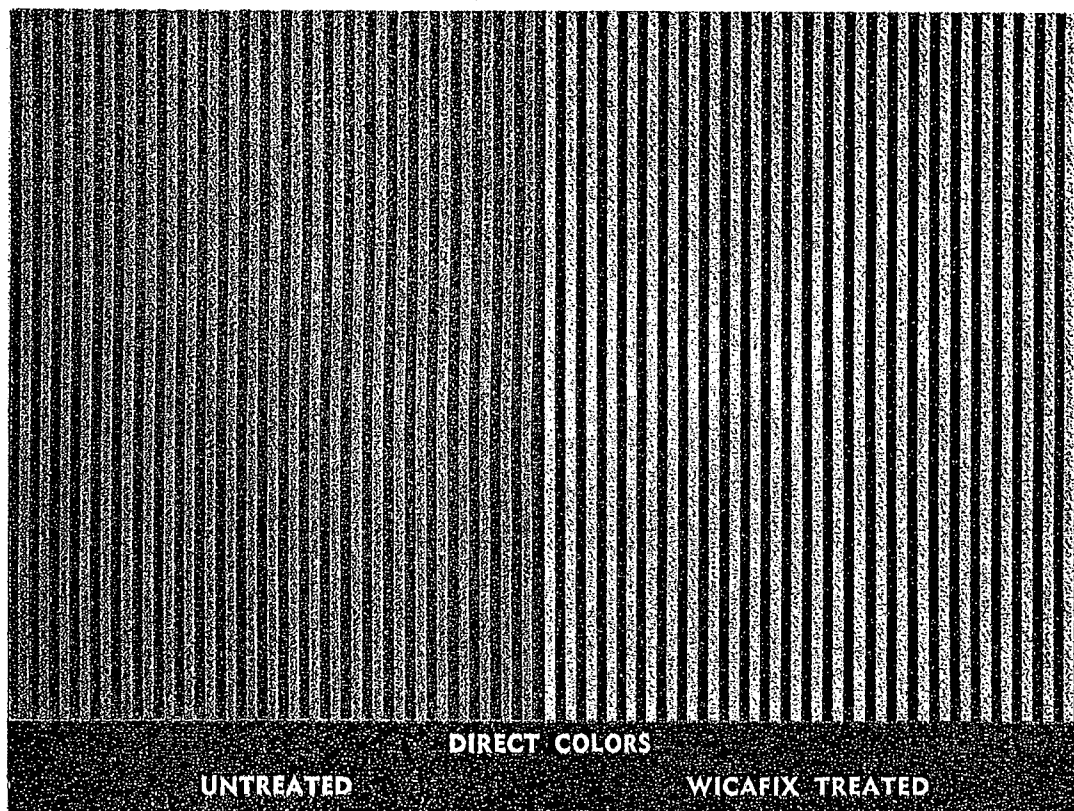


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36th Annual Convention and Metropolitan Section

EVALUATION OF CARRIERS FOR DACRON DYEING*

PETER J SCOTT
The Tanatex Chemical Corp
Kearny, NJ

INTRODUCTION

POLYESTER fibers such as Dacron and Terylene, are easily dyed with disperse dyes provided that dyeing temperatures are 250° F or higher. Such temperatures require pressurized equipment which is not generally available, above all, where piece goods are concerned. High-temperature dyeing has both advantages and drawbacks (1), but it is definitely limited by the nature of other fibers that may be present—wool, for instance, should not be exposed to temperatures in excess of 230° F. By the use of certain chemicals known as carriers, the amount of dye absorbed at 205-208° F is increased to nearly that absorbed at 250° F (2). Temperatures of 205-208° F are attained in many kinds of nonpressurized equipment. Carrier dyeing of polyester fibers has therefore become generally acceptable.

A number of chemicals are useful as carriers. In addition, a great many proprietary products are offered to the industry. It is our purpose to present a method that will allow a comparative evaluation of two or more carriers and to illustrate it with some examples, without, however, attempting to evaluate the numerous products on the market.

PRELIMINARY SCREENING

TOXICITY—In most cases either the literature or the manufacturer will provide the necessary information. It should be noted that many carriers steam distill under the usual conditions of application. Therefore, a toxic material that has a high boiling point may be as dangerous as a low boiling one. Most of the carriers presently available cannot be considered completely nontoxic, and a good ventilating system is necessary for all carrier dyeing. Toxicity alone can be sufficient cause to eliminate a carrier from further consideration.

Carriers are widely used in the dyeing of Dacron and other polyester fibers. A simple procedure is presented which will allow for a comparative evaluation of two or more carriers. First, carriers to be investigated are screened as to toxicity, effect on other fibers, and application procedure. Next, evaluation dyeings are made. A certain shade is obtained with a given carrier and dyestuff combination. This shade is matched with another carrier and varying amounts of the same dyestuff combination. The combined cost of carrier and dyestuff is then calculated for both dyeings. The difference provides a measurement of the effectiveness of the carriers to be investigated, provided that the dyeings have acceptable appearance and fastness properties.

A tentative method to determine the optimum amount of carrier for a given dyestuff combination is also described.

EFFECT ON OTHER FIBERS

PRESENT—Very often Dacron is blended with other fibers. Carriers may have a detrimental effect on these fibers. Certain phenolic carriers, for instance, degrade rayon acetate and therefore should not be used on Dacron and acetate blends. A useful indication is obtained by comparing the tensile strengths of goods kept at 205° F for three hours in water, and in a 10 g/l carrier solution.

APPLICATION PROCEDURE

A carrier should be no more difficult to apply than the dyestuff with which it is used. Dyeing time is extremely costly. If carrier application time materially adds to dyeing time, the added cost should be considered in the overall evaluation. If the application of a carrier requires control operations that can be performed only by laboratory or supervisory personnel, its usefulness will be limited to a very few dyehouses.

CARRIER EVALUATION DYEINGS

GENERAL—After a carrier passes preliminary screening its most important properties are determined by making a number of dyeings with it. An acceptable dyeing has an even, uniform, and clear appearance. A carrier that produces spotty or uneven

dyeings is not usable. An acceptable dyeing also has the required fastness to washing, crocking, light, drycleaning, etc. These are essentially the properties of dyestuffs, but a carrier can affect them detrimentally. If a carrier does not give the required fastness properties it must be eliminated from further consideration. This leaves essentially only one variable, namely the combined cost of carrier and dyestuff needed to obtain an acceptable dyeing of a given shade. Carriers, then, are suitably evaluated by preparing matching dyeings made under optimum conditions of carrier concentration and then comparing the costs of the matching dyeings.

A carrier Y standard shade is obtained on 100 pounds of Dacron as follows:

Carrier Y	— 10 pounds @ \$.50	— \$ 5.00
Dyestuffs	— 5 pounds @ 4.00	— 20.00
Total cost of dyeing		\$25.00

The dyeing below, made with carrier Z, shows considerably better color value, at the same cost:

Carrier Z	— 10 pounds @ \$.50	— \$ 5.00
Dyestuffs	— 5 pounds @ 4.00	— 20.00
Total cost of dyeing		\$25.00

The appearance and fastness properties of both dyeings are acceptable.

The difference in color can now be determined in various ways (3), but a much more practical and final measurement of the difference is obtained by matching the carrier Y shade in subsequent dyeings. This is done by reducing the amount of either carrier Z or of dyestuff. From a purely economical point of view it would be unwise not to exhaust all the expensive dyestuff that carrier Z evidently can handle. Practically, it is found that significant, say 20 percent, differences in color value cannot usually be matched by varying carrier concentration, for the following reasons: a certain minimum of carrier must be used to obtain the required fastness results, excessive amounts of carrier actually decrease color values, and color value differences between the two extremes are small. A tentative method that indicates the optimum carrier con-

*Presented November 16, 1957 before the 36th Annual AATCC Convention at the Hotel Statler, Boston, Mass. and April 18, 1958 before the Metropolitan Section at Kohler's Swiss Chalet, Rochelle Park, N. J.

centration for a given shade is described below. For the comparative evaluation of carriers it is quite satisfactory to use carrier concentrations as recommended by the manufacturer.

PLANT PROCEDURE—Carrier A is presently used in production to dye a certain heavy shade on 100 pounds of Dacron goods as follows:

Carrier A — 14 pounds @ \$.40 — \$ 5.60
Dyestuffs — 6 pounds @ 4.00 — 24.00

Total carrier A dyeing cost \$29.60

Carrier B has passed preliminary screening. It is offered at \$.50 per pound and the supplier recommends that 14 pounds of carrier B be used to dye a heavy shade on 100 pounds of Dacron goods. A simple beaker dyeing made with 14 percent carrier B and 6 percent of the same dyestuffs showed acceptable appearance and fastness properties as well as a heavier shade. The extent of the difference in color value is determined in the plant evaluation dyeing. The usual amount of dyestuff is arbitrarily reduced by 30 percent, and the dyeing accordingly is started with 4.2 pounds of dyestuff. After one hour at dyeing temperature the first add is made, followed by others, until the shade obtained in the carrier A dyeing is matched. If carrier B gives considerably better color value, the match may have been made as follows:

Carrier B — 14 pounds @ \$.50 — \$ 7.00
Dyestuffs — 4.5 pounds @ 4.00 — 18.00

Total carrier B dyeing cost \$25.00

If the dyeing meets appearance and fastness requirements, carrier B, even though it costs 25 percent more than carrier A, is indeed a better carrier.

The great advantage of plant evaluation dyeings is that they can be made in plant equipment and under actual production conditions. This is also their shortcoming, because in production, the dyeing is terminated when the match is made, and for this reason time and temperature conditions are rarely the same for any two dyeings. On the beek, for instance, it is quite possible to dye matching shades that vary as much as 7.5 percent from the standard dyestuff formulation. It should be noted that the plant procedure takes the volatility of the carrier into account. A match cannot be made economically, or even made at all, if a considerable amount of carrier is lost rapidly.

Three specific evaluation dyeings will be described to illustrate the plant procedure. A modified phenol derivative carrier, Carolid, was to be evaluated against a modified solvent carrier, Tanavol. The latter has been

TABLE I
Plant Match 2—Navy

Per 100 lbs Dacron			
	@ \$	lbs	Cost \$
Standard dyeing			
Latyl Blue BG	7.67	1.000	7.67
Latyl Violet BN	2.18	5.150	11.23
Latyl Cerise B	5.03	0.470	2.36
Acetamine Yellow 4RL	3.14	0.420	1.32
Total dyestuff	3.21	7.04	22.58
Tanavol	.47	14.0	6.58
Total dyeing cost			29.15
Evaluation dyeing			
70% of standard dyeing			
total dyestuff above	3.21	4.928	15.81
Latyl Violet BN	2.18	.180	.39
Total dyestuff		5.108	16.20
Carolid	.59	14.0	8.26
Total dyeing cost			24.46
Savings against standard dyeing			4.69

Plant Match 4—Brown

Per 100 lbs Dacron			
	@ \$	lbs	Cost \$
Standard dyeing			
Latyl Blue BG	7.67	1.332	10.22
Latyl Violet BN	2.18	1.370	2.99
Latyl Cerise B	5.03	1.505	7.57
Acetamine Yellow 4RL	3.14	1.900	5.97
Total dyestuff	4.38	6.107	26.75
Tanavol	.47	14.0	6.58
Total dyeing cost			33.33
Evaluation dyeing			
70% of standard dyeing			
total dyestuff above	4.38	4.275	18.72
Latyl Violet BN	2.18	.20	.44
Latyl Cerise B	5.03	.155	.78
Total dyestuff		4.630	19.94
Carolid	.59	14.0	8.26
Total dyeing cost			28.20
Savings against standard dyeing			5.13

Plant Match 6—Gray

Per 100 lbs Dacron			
	@ \$	lbs	Cost \$
Standard dyeing			
Interchem Blue GFS	3.28	1.170	3.84
Interchem Yellow G	2.08	.225	.47
Interchem Black NCS	2.61	3.370	8.80
Interchem Pink BLF	3.53	.375	1.32
Total dyestuff	2.81	5.140	14.43
Tanavol	.47	14.0	6.58
Total dyeing cost			21.01
Evaluation dyeing			
70% of standard dyeing			
total dyestuff above	2.81	3.600	10.12
Interchem Pink BLF	3.53	.038	.13
Total dyestuff		3.638	10.25
Carolid	.59	14.0	8.26
Total dyeing cost			18.51
Savings against standard dyeing			2.50

used in production for a considerable length of time. A rate of 14 percent, based on the weight of the Dacron present, has been found to give heavy dyeings of acceptable appearance and fastness properties. The same percentage of the higher-priced modified phenol derivative carrier is recommended, which will increase carrier costs considerably. On the other hand,

beaker dyeings made with equal amounts of dyestuff show that the more expensive carrier gives heavier shades.

The goods to be dyed on the beek were ten-piece lots of 50 percent spun Dacron—50 percent viscose tropical, weighing about 8½ ounces to the yard. The same six-foot beek was used for all dyeings. The liquor to goods ratio was about 17:1. First, a standard dyeing was made using Tanavol at the usual concentration. Next, an evaluation dyeing was made in which the same shade was matched, using Carolid at the recommended concentration, varying only the amounts of dyestuff used. The dyes mentioned are those that happened to be used in the plant where the evaluation dyeings were made. They could have been replaced by others of equivalent properties. Mention of certain disperse dyes does not imply a preference or a recommendation. Carrier evaluation dyeings can be made with any disperse dye, the particular brand used being of no significance in this respect. Table I gives all the details of the following dyeings.

Plant Match 2. In the standard dyeing using Tanavol, a navy was dyed to the specified shade. The match was made after two adds of dyestuff. In the evaluation dyeing on the next day, Carolid was used. The dyeing was started with 70 percent of the total dyestuff used in the standard dyeing. No add was made after one hour at the boil. After two hours, an add of Latyl Violet BN was made, and after another hour the dyeing was considered matched. The shade was a little light, but seemed to be clearer. The evaluation dyeing showed a saving of \$4.69 per 100 pounds Dacron, which amounts to about 71 percent of the standard dyeing carrier cost.

Plant Match 4. In the standard dyeing using Tanavol, a brown was dyed to the specified shade. The dyestuffs used for the navy were used for this shade also, but the proportions were, of course, different. The match was made after two small adds. In the evaluation dyeing on the next day, Carolid was used. The dyeing was started with 70 percent of the dyestuff used in the standard dyeing. Three adds were made, and after five hours at the boil, the dyeing was completed. The match again was on the light side, but judged acceptable. Saving amounts to \$5.13 per 100 pounds Dacron.

Plant Match 6. In the standard dyeing, Tanavol was used with another

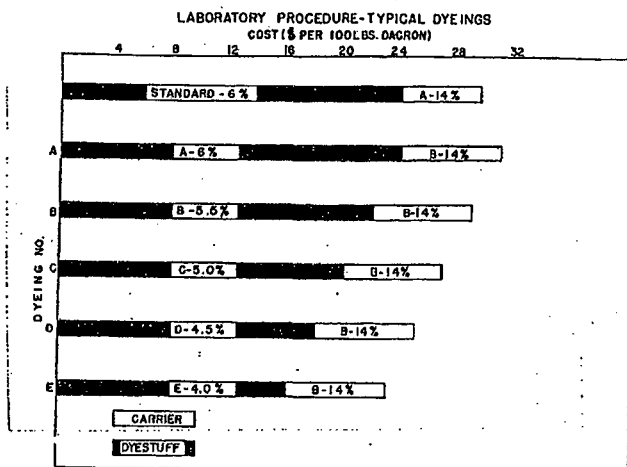


Figure 1

range of dyestuffs to produce a dark gray. The match was made with two adds. In the evaluation dyeing using Carolid, the dyeing was started with 70 percent of the total standard dyeing dyestuff, and the match was made with one small add after three hours at temperature. It was slightly off cast, but this will be corrected when dyeing the viscose. The saving using Carolid is \$2.50 per 100 pounds Dacron.

All the dyeings above passed a careful inspection. The fastness properties were found to be acceptable. The modified phenol derivative carrier allowed a considerably more economical dyeing of shades obtained with the modified solvent carrier. This was true, even though the former carrier cost more. If the savings for the three dyeings above are averaged, they amount to about 62 percent of the cost of the modified solvent carrier.

LABORATORY PROCEDURE—Carriers A and B mentioned under Plant Procedure above are to be evaluated in the laboratory. It is known that B gives better color values than A. In the plant procedure the carrier A dyeing was matched by making adds of dyestuff to one carrier B evaluation dyeing. In the laboratory, a number of carrier B dyeings are made simultaneously with the standard dyeing, under the same conditions of time, temperature, etc, using the same and gradually decreasing amounts of dyestuff. This technique is exact and avoids difficult and time-consuming color matching. A typical series would be:

- Set up a standard dyeing, using 14 percent carrier A and 6 percent dyestuffs, both on the weight of the Dacron, as in the plant dyeing.

- Set up comparative dyeings with the recommended amount of carrier B, ie, 14 percent carrier B and a) 6, b) 5.5, c) 5.0, d) 4.5, e) 4.0 percent of the same dyestuffs as in the standard above.

The dyeings are not run until a final match is made, but for a given period of time, say three hours at 208° F. When they are completed the standard is compared to dyeings a, b, c, d, and e. These show gradually decreasing color values, and it is rather easy to find a match for the standard dyeing. Corresponding depths of shade are determined readily even though dyeings made with different carriers usually do not have the same cast. The total cost of carrier and dyestuff is then computed for each dyeing, as illustrated in Figure 1. The difference in cost between the carrier A standard dyeing and the matching carrier B dyeing measures the difference between the carriers with respect to the shade dyed. If the appearance and fastness properties of the dyeings are acceptable, and the standard dyeing is matched by dyeing d, carrier B is a much better carrier than carrier A because the same shade was achieved for \$4.60 less, which amounts to about 82 percent of the \$5.60 carrier A cost in the standard dyeing.

The volatility of a carrier, ie, the dyeing time after which additional amounts of dyestuffs will not be absorbed by the goods, may be in doubt. It is determined by running dyeings similar to the above, except that only two-thirds of the dyestuff to be used is added initially, and the remainder after two hours at dyeing temperature. A difference in volatility between carriers A and B will show up in the results.

A considerable number of labora-

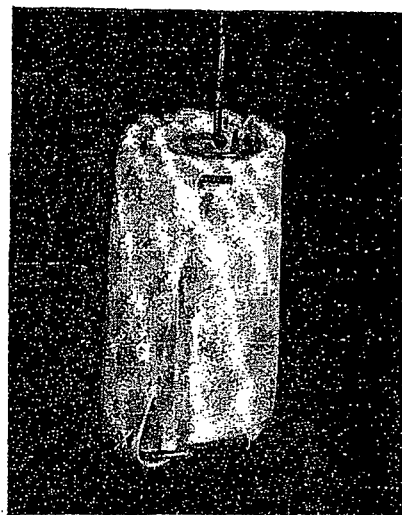


Figure 2

tory evaluation dyeings were made in a mechanically agitated beaker bath designed for this purpose. Twelve 20-gram dyeings can be made at one time in 1000-ml dye pots. A 20:1 water-to-goods ratio is preferred because it approximates dyebeck conditions. 20-gram swatches are folded in thirds. A seam is sewn along one of the folds to form a loop which allows the swatch to be threaded on a heavy wire spiral as illustrated in Figure 2. Another wire spiral is inserted in the bottom loop of the swatch. The upper spiral moves up and down at the rate of about 30 strokes a minute. The length of each stroke is 4 inches, and the swatch is alternately squeezed and stretched. Each beaker is provided with a vented rubber cover and a gasket, which prevents loss of dye liquor by splashing. The beakers are placed in the usual steambath. As they are covered, dyeing temperatures of 210-211° F are easily attained. After three hours at this temperature, only about 60 mls of dye liquor evaporate, and this loss is quite uniform.

Evaluation dyeings were run mostly on heavy shades, ie, 5 to 7 percent dyestuff based on the weight of the Dacron present. Combinations such as browns, navies and grays allowed for better visual evaluations than single dyestuffs because of the different casts caused by different carriers. Dyeings on 100 percent Dacron goods did not show differences as clearly as dyeings on goods where the Dacron was blended with a fiber not stained by disperse dyestuffs, such as viscoose. Dyestuff concentrations of about 2.5 percent based on the weight of the Dacron gave results comparable to those of the heaviest dyeings.

The results from a series of carrier evaluation dyeings made according

to the laboratory procedure are submitted. They do not cover the entire field, and are useful mainly as an illustration of the method.

The dyestuff combination chosen for the series was a brown consisting of:

	Lbs	Cost/lb	Total Cost
Acetamine Yellow 4RL	1.8	3.14	5.65
Latyl Blue BG	1.3	7.67	9.97
Latyl Violet BN	1.4	2.18	3.05
Latyl Cerise B	1.5	5.03	7.55
Total dyestuff	6.0	4.37	26.22

The goods dyed were a blend containing 50 percent spun Dacron and 50 percent viscose. Water-to-goods ratio was 20:1. All dyeings were run for three hours at 210° F. In all cases, the dyeing with the carrier to be evaluated was made simultaneously with a number of dyeings at the same and at decreasing dyestuff concentrations made with another carrier, as illustrated in Figure 1. Carriers were used at the rate recommended by the manufacturer, or at what was deemed the lowest concentration at which satisfactory fastness and appearance results were obtained. A tabulation of the carriers used in this series, as well as sets of the specific dyeings made, are shown on Table II.

TABLE II

Designation	Cost/lb	Type of Carrier
Carolid —C	\$.59	modified phenol derivative
Carrier —M	.26	emulsifiable phenol solution
Carrier —N	.20	modified solvent
Carrier —P	.38	solvent
Carrier —Q	.30	modified solvent
Carrier —R	.30	solvent
Tanavol —T	.47	modified solvent
Tanalon —U	.38	solvent

Evaluation Dyeings

M-C	N-C	N-C
Carrier Dye	Carrier Dye	Carrier Dye
% %	% %	% %
M 32 6	N 14 6—	N 14 6*
M 21.7* 6—	C 12 6	C 12 6*
M 10 6	C 12 5.4	C 12 5.4*
C 12 6	C 12 5.1	C 12 5.1*
C 12 5.4	C 12 4.8—	C 12 4.8*
C 12 4.8	C 12 4.5	C 12 4.5*
C 12 4.2—		C 12 4.2*

*best M dyeing

*25% of dye added after 2 hrs at 210° F

P-U-T-C	Q-T-C	R-U-T-C
Carrier Dye	Carrier Dye	Carrier Dye
% %	% %	% %
P 12 6—	Q 12 6—	R 12 6—
P 18.65 6—	T 12 6—	U 12 6—
U 12 6	T 12 5.4—	T 12 6—
U 12 5.4	T 12 5.1	T 12 5.6
U 12 5.1—	T 12 4.8	T 12 5.2—
T 12 6	C 12 6	T 12 4.8
T 12 5.4	C 12 5.4	T 12 4.2
T 12 4.8	C 12 5.1	C 12 6
T 12* 4.5—	C 12 4.8—	C 12 5.6
C 12 6	C 12 4.5—	C 12 5.2
C 12 5.4	C 12 4.2	C 12 4.8—
C 12 4.8		C 12 4.2—
C 12 4.2		
C 12* 3.9—		

*estimated—no actual dyeings

T-C Carrier Dye % %

T 14 6—
C 14 6
C 14 5.5
C 14 5—
C 14 4.5
C 14 4.0

— and = designate matching dyeings.

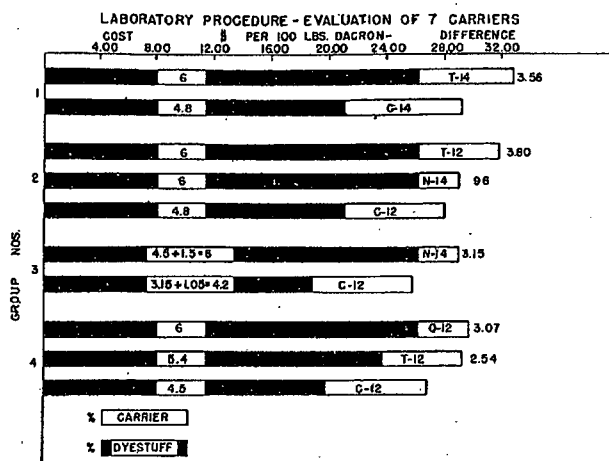


Figure 3

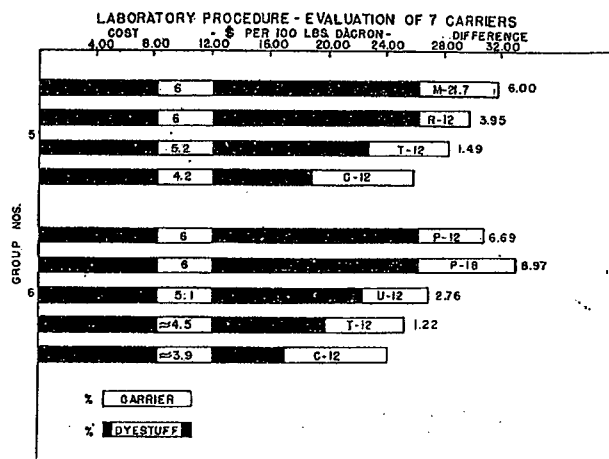


Figure 4

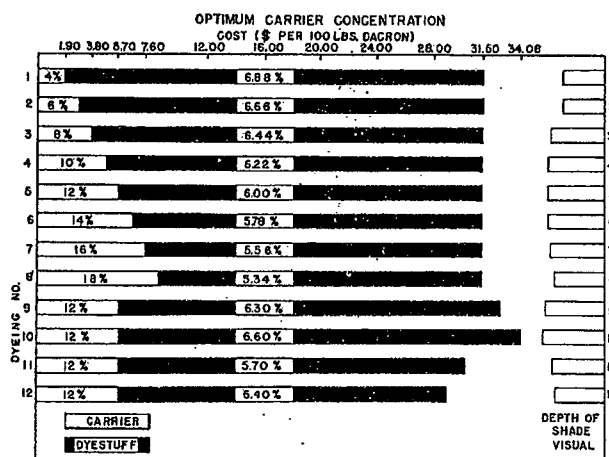


Figure 5

Only the matching dyeings from each set are shown on bar graphs, Figures 3 and 4. To consolidate the results, identical dyeings, ie, those made with equal amounts of dye and equal amounts of the same carrier, are shown only once. Each bar represents a dyeing, and each group of

bars, matching dyeings. The lowest bar in each group is the matching dyeing made with the least amount of dyestuff. Each carrier is thus classified by the amount of dyestuff it was able to exhaust compared with all others evaluated in the series. In addition, the difference in cost between

each dyeing and the most economical dyeing in each group is indicated to the right of each bar. All costs are based on 100 pounds Dacron.

It is quite evident that the modified phenol derivative carrier utilized more of the dye present, and gave more economical dyeings, than modified solvent carriers, emulsifiable phenol solution carriers, and solvent carriers. Because of its low cost, modified solvent carrier N was very close to modified phenol derivative carrier C (Figure 3, Group 2). But when the same evaluation was repeated with 25 percent of the dyestuff withheld until two hours of dyeing time had elapsed, to check the volatility of the carriers, the difference became much greater (Figure 3, Group 3). There are also considerable differences within each group which are clearly resolved by the method used.

In dyeings on other goods, such as 100 percent spun Dacron, and 55 percent Dacron - 45 percent wool, and with a variety of dyestuffs and combinations, Dowicide A (o-phenylphenol sodium salt) proved to be about equivalent to Carolid, modified phenol derivative carrier. Methyl salicylate emulsions (4) were found to be roughly equivalent to the better modified solvent carriers. Benzoic acid, salicylic acid, and phenyl methyl carbinol were found to be uneconomical, together with a number of high-priced chemicals and proprietary carriers.

DETERMINATION OF OPTIMUM CARRIER CONCENTRATION

From the preceding discussion it is apparent that the most important property of a carrier is evaluated by matching a given shade at the lowest possible cost, that is, with a minimum amount of dyestuff and at the lowest carrier concentration that will give acceptable dyeings. This concentration is the optimum carrier concentration. A tentative method to determine it, which takes the cost factor into consideration, was developed. It is best described by a specific example.

The optimum concentration of modified phenol derivative carrier W for dyeing a certain heavy brown is to be determined. The goods to be dyed are a blend of 50 percent spun Dacron and 50 percent viscose. It is known that the shade can be satisfactorily dyed with 12 percent carrier W and 6 percent dyestuff, both based on the weight of the Dacron present. Carrier W costs \$.475 per pound, the

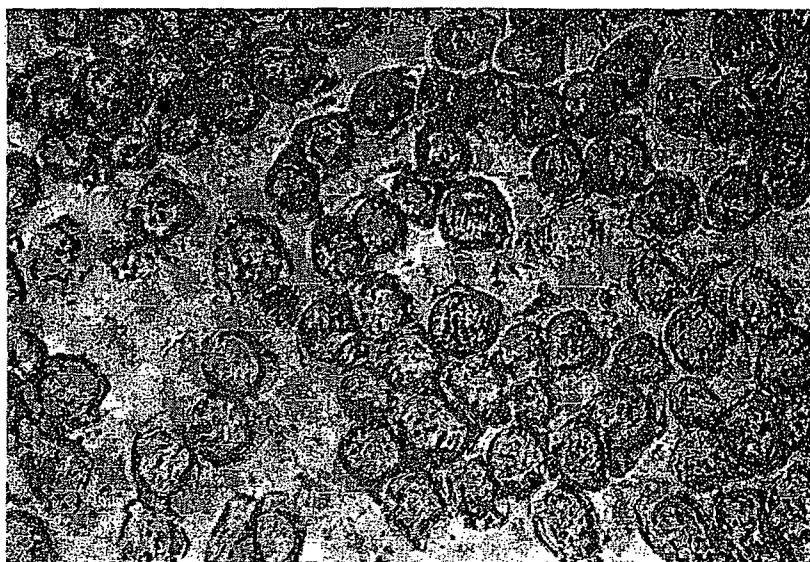


Figure 6

dyestuff combination used

Acetamine Yellow 4RL	1.8%
Latyl Blue BG	1.3%
Latyl Violet BN	1.4%
Latyl Cerise B	1.5%

about \$4.30 per pound, which amounts to a total dyeing cost of \$31.50 per 100 pounds of Dacron. The dyeings specified in Figure 5 are now run simultaneously for three hours in the mechanically agitated beaker bath described above. Dyeings 1 through 8 will show the heaviest shade obtainable for \$31.50 from carrier W and the dyestuff used, varying the carrier concentration from 4 to 18% owf in 2% increments. The heaviest \$31.50 shade can then be compared to dyeings 9 through 12, which show the effect of increasing and decreasing the amount of dyestuff used by 5 and 10 percent, while leaving the carrier concentration constant at the 12% owf standard.

The results are also indicated on Figure 5. They show that the \$31.50 dyeings increase in depth of shade with the carrier concentration until 10 percent is reached. The depth of shade then remains about equal up to 14 percent carrier concentration, and then goes down as carrier concentration increases to 16 and 18 percent; however, the 18 percent dyeing (8) is better than dyeings 1 and 2, and the 16 percent dyeing (7) is about equal to the 8 percent dyeing (3). None of the carrier variations resulted in an improvement that approached what a 10 percent dyestuff addition achieved in dyeing 10. It may be concluded that 10 percent is the minimum carrier concentration to be used for the particular shade.

A severe scour with 2 percent sodium hydrosulfite and 1 percent

caustic soda did not affect the results significantly. The appearance of all dyeings was acceptable with the exception of dyeings 1 and 2, which were somewhat uneven. Fastness to dry and wet crocking was acceptable for all dyeings. Fastness to laundering was best for dyeing 8, using 18 percent carrier. It was poorest for dyeings 1, 2, 3, and 4. All others were approximately equal. Fastness to dry-cleaning was poorest for dyeing 1, somewhat better for dyeings 2 and 3, and about equal for all others. A microscopic examination showed poor dyestuff penetration for dyeing 1, made with 4 percent carrier; better dyestuff penetration for dyeing 5, made with 12 percent carrier; and good penetration for dyeing 8, made with 18 percent carrier. Microphotographs of these dyeings are shown in Figures 6, 7, and 8.

Final conclusions from this series of dyeings are: 12 percent carrier W is the minimum amount of carrier to be used for this shade and construction. While the microscopic examination showed that penetration was not perfect, the fastness properties were acceptable. Additional amounts of carrier will tend to improve both penetration and fastness properties.

Other dyeings of this type made on 100 percent spun Dacron goods confirmed the results obtained on the 50 percent Dacron - 50 percent viscose blend. They also showed that tarring occurs more often where there is a deficiency of carrier.

It is recognized that the validity of the tentative method given above suffers because the standard dyeing is chosen rather arbitrarily. A future paper on the determination of the

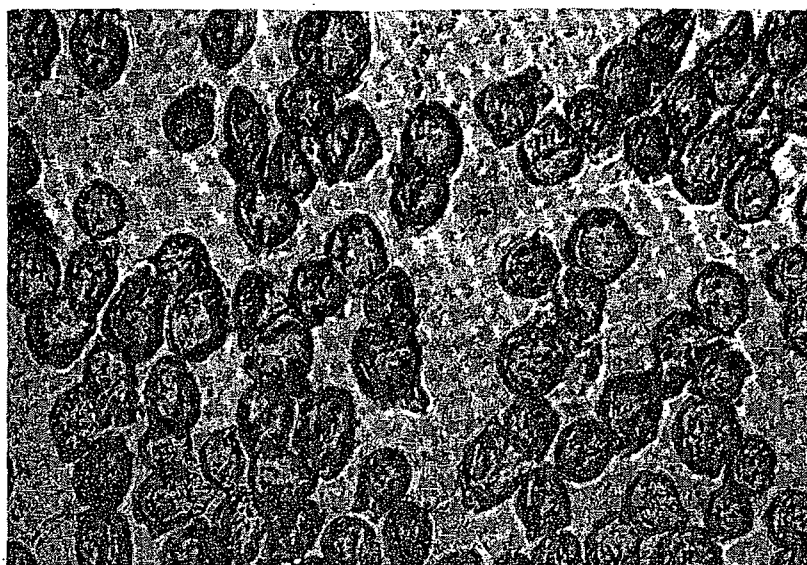


Figure 7

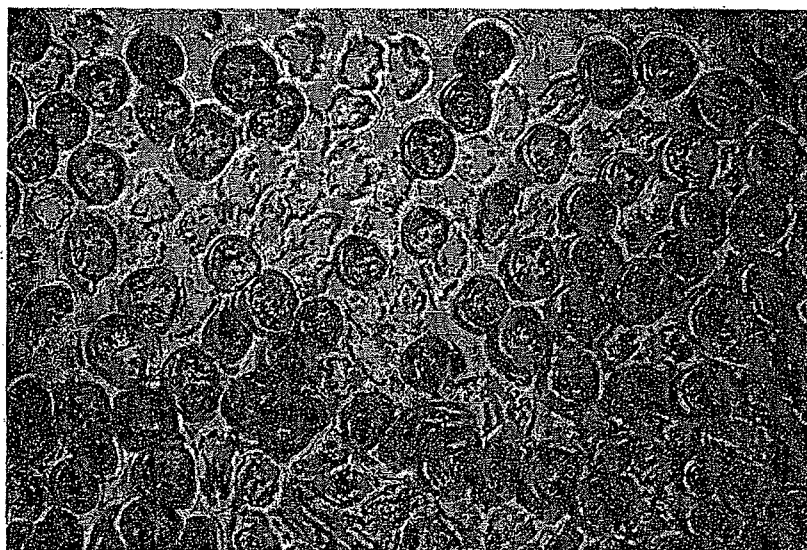


Figure 8

optimum carrier concentration may be based on the following scheme.

- 1) Determine the cost of the heaviest dyeing obtainable from a constant amount of dyestuff with increasing carrier concentrations.
- 2) Attempt to match the heaviest dyeing obtained by increasing

the dyestuff concentration in small increments and decreasing carrier concentration in such a way that total dyeing costs will be less for each dyeing.

Note: Prices of various dyestuffs and carriers quoted in this article were those in effect on March 25, 1957.

SUMMARY

A significant comparison of two carriers, A and B, is to determine the cost of matching, with carrier B, a shade obtained with a given dyestuff formulation and carrier A, using varying amounts of the same dyestuff formulation. The comparison is valid only if the appearance and fastness properties obtained are satisfactory.

A tentative method to determine the optimum carrier concentration for dyeing a given shade, where the cost factor is given consideration, is described.

ACKNOWLEDGEMENT

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TRADEMARKS

The names Carolid, Tanalon, and Tanavol are registered trademarks of The Tanatex Chemical Corp, Kearny, NJ; the name Dowicide is a registered trademark of The Dow Chemical Co, Midland, Mich; the names Acetamine, Dacron, and Latyl are registered trademarks of E I du Pont de Nemours & Co, Inc, Wilmington, Del; the name Terylene is a registered trademark of Imperial Chemical Industries, Ltd, Millbank, London, UK; and the name Interchem is a registered trademark of Interchemical Corp, Hawthorne, NJ.

Washington

THE Washington Setcion held its final meeting of the season on Friday, April 11, at the National Housing Center, Washington, DC, with 46 members and guests in attendance.

The technical speaker of the evening was Fred Fortess, manager of dyeing and finishing, Celanese Corporation of America, Charlotte, N C, who presented a talk reviewing and summarizing "Recent Developments in the Chemical Finishing of Textiles."

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Establishing a Radiochemical Laboratory—

(concluded from Page 298)

viz, Geiger-Mueller Tubes, thin-window flow counters, windowless flow counters, ionization chambers, and scintillation counters.

A simple and reasonably versatile counting assembly for a small radiochemical laboratory would consist of a Geiger-Mueller Tube (approximately \$50) and shield (approximately \$315), a thin-window flow counter (approximately \$325) and a shield (approximately \$315) or a windowless flow counter (approximately \$450), and a scaling unit which contains an amplifier circuit (approximately \$1000).

The laboratory and counting equipment described above would provide the basic facilities required for a technical group of 1 to 4 people.

SOURCES OF SUPPLY

A definitive list of commercial suppliers for all laboratory equipment, radiochemicals, film badge and waste disposal services, and nuclear instrumentation is published each year in the November issue of the journal, *Nucleonics*. Technical brochures and literature are available from all companies listed.

In addition, catalogs describing products and services offered by Oak Ridge National Laboratory, Oak Ridge, Tenn and Atomic Energy of Canada, Ltd, Commercial Products Div, P O Box 93, Ottawa, Canada, can be obtained from these installations.

CONCLUSIONS

Several fruitful areas for studies on textile problems utilizing radioactivity now exist, and, undoubtedly, more will be uncovered as efforts are expanded in this field.

The costs involved in developing a small radiochemical laboratory are not prohibitive when compared to the capability such a facility offers for solution of a variety of complex textile problems.

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- (23) "Permissible Dosage from External Sources of Ionizing Radiation", National Bureau of Standards Handbook 59.
- (24) Henriques Jr, F C and Schreiber, A P, "Administration and Operation of a Radiochemical Laboratory", *Nucleonics* 2, No. 3, 1 (1948).
- (25) Steinberg, E P, "Interpretation of Counting Data", Argonne National Laboratory Report, ANL-5622 (1956).

Northern New England

AT its March 28th meeting, held at the Commander Hotel, Cambridge, Mass, the Northern New England Section heard Graham M Richardson, Technical Services Section, Textile Fibers Dept, E I duPont de Nemours & Co, Inc, speak on the subject "Nylon Carpet—Growth and Technology." Co-author of the paper is Joseph W Lynch, also of DuPont. The paper was presented as an interesting example of the growing importance of man-made fibers in the textile industry.

Dr Richardson emphasized the tremendous growth of the use of nylon fiber in carpeting in the last few years, and his data indicated that a tremendous upswing had occurred during the last two years. The principal reasons for the acceptance of nylon as a carpet fiber are its durability, its recovery from crushing, its price stability, its versatility (as to spinning systems and carpet styles), ease and performance of twist setting, ease of cleaning, mildew and insect resistance, nonsupport of combustion, and ease of dyeing to a fast range

of shades.

Dr Richardson showed data and exhibits to illustrate each of the above points and further indicated that Du Pont studies had resulted in 15-denier nylon carpet staple as the best choice at the moment. This staple is made in four types as follows: Type 100 has a bright luster; Type 101, which is "crimp set" in bright luster; Type 600, which is dull; and Type 601, which is "crimp set" in a dull luster.

Dyeing methods were discussed and a wide range of color types and dyeing methods indicated. The ability to set twist was discussed also, as well as means of making the twist setting more uniform by "dry tumbling" of

the yarn skeins and before setting.

The control of fuzzing and pilling has been subject to considerable study and these problems have been well rationalized as the result of development of test methods and mill processing procedures.

Considerable testing has been done by the Du Pont Company, most of which has demonstrated that nylon makes an extremely durable carpet material. An opinion survey was conducted by a marketing research organization, the result of which indicated a very satisfactory acceptance by the consumer. 76% of the owners of nylon carpets said they would purchase that type in the future.

Chairman Edward B Bell, Textile Aniline & Chemical Co, presided at the meeting. Plans for the meeting were made by Robert D Robinson, Bachmann-Uxridge Worsted Co, Inc, Div of Amerace Corp, vice chairman of the Section.

The Section's next meeting will be held this Friday (May 9) at the Lowell Technological Institute, Lowell, Mass, in conjunction with the LTI Student Chapter, which arranges the program for the annual joint meeting.



Richardson



Personal and Confidential

D. A. Gaudion
J. H. Castle, Jr.
R. VanInderstine
W. G. vonBerg

April 23, 1968

Subject: Tanatex

Attached is an analysis of the financial statements of Tanatex which were given to us by Peter Scott. This analysis is of necessity quite complicated and as indicated by the attached list of questions, is not entirely self-explanatory.

What does shine through clearly, though, is that this company has been enjoying a very strong growth momentum. While the great probability is that this relative rate of growth will decline as their earnings base increases, it does seem reasonable to expect that they can meet corporate targeted growth rates for the foreseeable future.

The purpose of the breakfast meeting scheduled for 7:30 A.M. on Thursday, April 25 at Midtown Tower Restaurant, is to give Van price authority to negotiate with Messrs. Scott and Weinstein. My own feeling is that this should be based on a multiple times net earnings less the Dutch payments plus some reflection of possible cost savings. (We need further information on the likelihood of additional cost payments and price savings.) Based on their

Page 2
April 23, 1968

record to date and comparable price earnings multiples for companies in the field, I think we should be willing to pay up to 18 to 20 times this formula plus a capitalized value of the remaining Dutch payments.



Stephen R. Hardis
md
Attachment

TANATEX

After the meeting with Peter Scott and Sidney Weinstein, the following additional information was presented and used to refine and upgrade the previous financial analysis:

- 1) Estimates of Fiscal 1968 sales and earnings.
- 2) Sales forecasts for Fiscal 1969 and 1972.
- 3) Unaudited financial statements for 9 months ending January 31, 1968.
- 4) Consolidated income statements for 1964-1967.
- 5) Sales by product lines.
- 6) A calculation of 1967 net income restated to show cost adjustments that would result from public ownership.

For the Fiscal year ending April 30, 1968, Tanatex is expected to earn \$720,000 on sales of \$6,311,000. This is

Financial Summary

	<u>1968 (E)</u>	<u>1967</u>	<u>1966</u>
Sales	\$6,311	\$4,049	\$3,747
Net Income	720	342	418
Profit Margin	11.4%	8.4%	11.2%
Return on Net Worth	31.0%	21.2%	32.5%

	<u>Sales</u>	<u>Earnings</u>
5 Year Growth Rates	27.4%	45.6%
9 Year Growth Rates	22.9	40.0

an increase from 1967 earnings and sales of 110% and 56% respectively. A breakdown of 1966 sales by product lines is shown on Exhibit I.

The increase in net income of \$378,000 (\$720,000 - \$342,000) is due to the following factors:

Increased Gross Margin	\$ 5,000
Increased Volume	212,000
Reduced SAD Expense and all other	<u>161,000</u>
TOTAL	\$ 378,000

SAD Expenses for the 9 months ending January 31, 1968 were only 24.8% of sales, down from the average of 31% for 1964-1966 and far below the 35.4% recorded in 1967. The gross margin increased to 46.7% from 45.9% in 1967.

For Fiscal 1968 the after tax profit margin will be 11.4%, the highest in history, exceeding the 11.2% recorded in 1966. The return on net worth will be 31.0%, second only to the 32.5% of 1966 and up substantially from the 21.2% of 1967. In 1967 the return on total assets was 10.7%. Comparable figures for 1966 and 1968 are not available.

Despite the earnings decline in 1967, earnings have increased 45.6% per annum for the last five years. When the earnings growth is calculated over the last nine years, the rate drops to 40.0%. The sales growth rates for five and nine years are 27.4% and 22.9% respectively.

Tanatex, according to their 1967 figures, is pouring most of its funds into expansion. Its capital spending was \$383,000 resulting in a net cash flow of \$8,000. Depreciation is slow with only 6.3% of fixed assets depreciated in 1967. To support the capital spending program only \$18,000 in dividends were paid, a payout rate of 5.3%.

The balance sheet can be described as low debt, medium liquidity. As of January 31, 1968, the current ratio was 1.9 and the quick ratio was 1.2. Funded debt was 7.6% of net worth consisting of a 6.34% mortgage rate with annual payments of \$26,000.

In the sales forecasts submitted by Tanatex, a growth rate of 20% is projected through 1972 with sales reaching \$13,180,000 in 1972. If Tanatex earned 10% after tax on these sales, the earnings would be \$1,318,000 in 1972 (See Exhibit II). 10%, the average of 1965 - 1968 margins, could even be conservative because Tanatex has shown the ability to continually increase margins over the long term.

So far we have been talking about earnings as reported. Some adjustments in reported earnings are necessary to determine what Tanatex profits would be as a Ritter Pfaudler unit over the long haul. This requires two adjustments, elimination of the effect of the sale of patents, trademarks, etc., to its Dutch affiliate and the reduction and elimination of certain cost elements.

In 1963 Tanatex sold various rights to its Dutch affiliate for \$779,000 with payments based upon a percentage of the affiliate's gross profits. These payments are taxable at capital gains rates and helped reduce Tanatex's 1967 tax rate to 40.2%. After April 30, 1968, \$432,000 or \$353,000 after tax remains due with the last payment to be received in 1972. Exhibit III shows the stream of payments and the effect of their removal on 1964-1968 reported income. At the bottom of Exhibit III is a calculation of the present value of the payments due from the Dutch affiliate between now and 1972. The payment stream was discounted at 15%.

If Tanatex becomes a RTR unit, certain costs will be cut back or eliminated. These include officers' salaries, autos, life insurance and profit sharing. Exhibit IV has a formula prepared by Tanatex restating 1967 net income as it might have been under public ownership. The adjustments seem to be in line with what RTR would do if Tanatex was acquired.

Because some of the cost components on Exhibit IV are variable, I applied the same formula to 1966 earnings (See Exhibit V) and the result was net income increased about 25% in each year. The absolute increases in 1966 and 1967 were \$152,000, and \$120,000 respectively and I think we could conservatively increase Tanatex's after tax profit by \$100,000 upon acquisition.

Further savings should accrue to RTR from the synergistic fit of Tanatex with Jersey State. Sandy Schwartzman has indicated that there are apparent fits in research, manufacturing,

and marketing that should strengthen both companies and reduce some operating expenditures. Because I am not qualified to quantify these savings and Tanatex's acquisition is not dependent upon such savings, I have omitted any financial implications of the potential synergism.

On Exhibit VI, the projected net income from Exhibit II has been adjusted to reflect both the removal of the expected payments from the Dutch affiliate and the expected cost reductions. Net income less Dutch payments is shown in Column (2) while Column (3) shows net income less Dutch payments plus cost reductions. On Exhibit VII, the two earnings forecasts from Exhibit VI have been converted to a calendar year basis.

In determining the price to be paid Tanatex, it is necessary to separate the earnings into two streams. The first stream is the earnings resulting from the Dutch payments which has a limited life. The second stream is those earnings resulting from operations which is reported earnings less the first earnings stream. Each of these earnings streams will be priced separately to arrive at the aggregate price to be paid.

The Dutch payments stream, because of its limited life, should be paid on the cash value of the earnings stream discounted at 15%. From Exhibit III, the present value of this stream is \$284,000 and at \$33 per share would involve 8,606 shares of RTR stock.

The second stream, representing the longer term earnings, should be priced out in the usual fashion of a multiple on the Fiscal 1968 earnings less the payments from the Dutch affiliate, or \$647,000. At 15 times earnings, the leverage would be .041 per share and we could go to about 27 times without dilution. Exhibit VIII shows the EPS leverage at various multiples of this earning stream.

The above does not recognize the cost reductions which will be part of the long term earnings potential of Tanatex. If \$100,000 in after tax cost reductions is added to Fiscal 1968 earnings, less Dutch payments, the leverage calculations are changed. On Exhibit IX the leverage for various multiples of earnings adjusted for cost reductions is shown. In this case the leverage at 15 times earnings is \$.034 per share and we could go to 24 times without dilution.

In both cases the leverage calculation was based on earnings for calendar 1968 of \$813,000. This includes both Dutch payments and the cost reductions for the portion of 1968 for which Tanatex would be an RTR unit. The Dutch payments are included because they will be a source of income even though they have been omitted from the pricing calculations because of their limited life.

Although there are now publicly traded companies exclusively in textile auxiliaries, a number of companies that derive a portion of their sales from these chemicals are listed on Exhibit X with their respective P/E multiples. Included at the end of the exhibits is a financial ratio analysis sheet for Tanatex as reported.

The earnings forecast used to this point have all been predicated on Tanatex's sales forecasts which assume a growth rate of about 20% through Fiscal 1972. On Exhibit X, sales growth rates of 10% and 15% are used to forecast sales through Fiscal 1972. Earnings for each year are based on 10% profit margin plus \$100,000 for cost reductions. The earnings are then converted to a calendar year basis. These earnings are divided by the maximum shares that might be issued to acquire Tanatex, 484,000 from Exhibit IX. If Tanatex is acquired for few shares the earnings per share results would be adjusted upward. For calendar 1971, Tanatex would earn a minimum of \$2.80 a share if volume grows at 20% and \$2.06 a share if volume grows at only 10%. The chances of a 10% growth rate are fairly remote given that sales growth for the most recent five years has been 27.4%.

The calculation of the cost of purchasing Tanatex were based upon earnings without consideration of the composition of stockholders equity. The number of outstanding preferred shares, 54, is small enough to make unnecessary, any complex calculations of differing exchange rates between preferred and common stockholders.

EXHIBIT I

Tanatex
Sales by Product Lines
Fiscal 1968

<u>Product Line</u>	<u>Amount</u>	<u>%</u>
Phenolic Carriers	\$1,020	16.2
Modified Chlorobenzene	763	12.1
Biphenyl	1,545	24.5
Modified Phenolic	20	0.3
Printing	110	1.7
Chlorobenzene	73	1.2
Cationic Dyeing	317	5.0
Ester	245	3.9
Hydro Carbon	31	0.5
N.O.C.	18	0.3
Sequestering Agents	141	2.2
Cationic Dyeing Specialties	630	10.0
Softeners	102	1.6
Polyethelene Emulsions	28	0.4
Surfactants - Q	448	7.1
Surfactants - Other	339	5.4
Sodium Chlorite	70	1.1
Intermediates	26	0.4
Organic Chemicals	111	1.8
All Other N.O.C.	217	3.4
Raw Materials	57	0.9
 TOTAL	 \$6,311	 100.0%

EXHIBIT II

Tanatex
Forecasts

<u>Fiscal Year</u>	<u>Sales</u> ¹	<u>Profits</u> ²
1969	\$ 7,611,000	\$ 761,000
1970	9,467,000	947,000
1971	11,323,000	1,132,000
1972	13,180,000	1,318,000

¹
1969 and 1972 Tanatex estimates. Figures for 1970 and 1971 are interpolated. See Attached memo from Peter Scott on forecast Methodology.

²
At 10% - Average of last four fiscal years.

EXHIBIT II

Sales Forecast Methodology

- 1) If FY '69 sales are estimated at three times the "last four months FY '68 estimate", and there is an overall 10% increase, FY '69 sales would be \$7,461 M--an increase of 18% over estimated FY'68 sales of \$6,310M.
- 2) When a conservative growth factor as well as expected price changes were applied to the results of "all of FY '68 estimate" sales of \$7,611M or a 20% increase over FY '68 resulted, as per columns 4 and 7a.
- 3) Finally, when a conservative growth factor as well as expected price changes were applied to the "last four months' FY '68 estimate" rather than to the "all of '68 estimate", sales of \$8,413M, or a 33% increase are shown, as per columns 12 and 13.
- 4) If a 20% "compounded annual growth rate" is applied to the \$7,611M--a lower rate of growth than experienced in the last seven years--FY '72 sales should be in excess of \$13 MM. We believe that polyester and acrylic fiber consumption can maintain this rate of growth without any difficulty. It will actually be greater than required to maintain the rate of growth we forecast for our business.

This forecast is based essentially on existing business and existing products. Our greatest endeavor is directed towards adding new product lines while maintaining the growth of the existing ones. Based on past performance, our research and development efforts can very well sizeably increase the rate of growth forecast.

All of the above applies only to our business in the United States. The business of our subsidiaries abroad should grow at an at least equal rate but may well grow faster.

EXHIBIT III

Tanatex
Payments from Dutch Affiliate

<u>Fiscal Year</u>	<u>Pre-Tax Amount</u>	<u>After Tax Amount</u>	<u>Income Restated Without Payments</u>
1964	\$ 36,000	\$ 27,000	\$ 103,000
1965	53,000	40,000	214,000
1966	75,000	56,000	362,000
1967	85,000	64,000	278,000
1968	98,000	73,000	647,000
1969 (E)	113,000	85,000	
1970 (E)	128,000	96,000	
1971 (E)	143,000	107,000	
1972 (E)	<u>48,000</u>	<u>36,000</u>	
TOTAL	\$779,000	\$584,000	

Present Value of After Tax Payments Yet to be Received - \$284,000

<u>Year</u>	<u>After Tax Payments</u>	<u>Discount Factor - 15%</u>	<u>Discounted Payments</u>
1969	\$ 85,000	1.000	\$ 85,000
1970	96,000	.929	89,000
1971	107,000	.799	85,000
1972	<u>36,000</u>	.688	<u>25,000</u>
TOTAL	\$ 324,000		\$284,000

EXHIBIT IV

The Tanatex Chemical Corporation
Calculation of Formula Net Income for the
Purposes of the Proposed Public Issue
April 30, 1967

Net Income per consolidated financial statements \$342,291

Adjustments to consolidated Net Income to arrive at
formula Net Income:

Add back expenses that would be eliminated or re-
duced as a result of the proposed public issue:

	<u>Actual Expense</u>	<u>Proposed Expense</u>	<u>Net Amount Added back to Income</u>
Profit sharing plan contribut.	\$102,848	\$ None	\$102,848
Bonus System	---	15,000	(15,000)
Charitable Cont.	25,676	2,000	23,676
Med. Expense Plan	3,352	None	3,352
Officers'			
Salaries	140,000	80,000	60,000
Auto Expense	<u>10,000</u>	<u>None</u>	<u>10,000</u>
	<u>\$281,876</u>	<u>\$97,000</u>	<u>\$184,876</u>

Deduct applicable taxes:

State Taxes:		
(2.7% of \$184,876)	\$ 4,992	
Federal Income Taxes		
(48% of \$179,884		
(\$184,876 less		
\$4,992)	<u>86,344</u>	
		<u>91,336</u>
		<u>\$ 93,540</u>

Add back insurance expense
Officers' life insurance 26,949

Additional net income to
arrive at formula net
income 120,489

Net income as calculated on proposed
formula basis \$462,780

EXHIBIT V

The Tanatex Chemical Corporation
Calculation of Formula Net Income for the
Purposes of the Proposed Public Issue
April 30, 1966

Net Income per consolidated financial statements \$418,000

Adjustments to consolidated Net Income to arrive at
formula Net Income:

Add back expenses that would be eliminated or re-
duced as a result of the proposed public issue:

	<u>Actual Expense</u>	<u>Proposed Expense</u>	<u>Net Amount Added back To Income</u>
Profit Sharing plan contribut.	\$155,000	\$ None	\$155,000
Bonus System	---	15,000	(15,000)
Charitable Cont.	36,000	2,000	34,000
Med. Expense Plan	3,000	---	3,000
Officers'			
Salaries	140,000	80,000	60,000
Auto Expense	<u>10,000</u>	<u>None</u>	<u>10,000</u>
			\$247,000
Deduct applicable taxes:			
State Taxes:			
(2.7%)		7,000	
Federal Income Taxes:			
(48% of \$240,000			
(\$247,000 less			
\$7,000)		115,000	<u>122,000</u>
			125,000
Add back Life insurance expense			27,000
Additional net income			<u>152,000</u>
Net income as calculated on proposed formula basis			<u><u>\$570,000</u></u>

EXHIBIT VI

Tanatex
Earnings Forecasts
Fiscal Year Basis

	(1)	(2)	(3)
<u>Fiscal Year</u>	<u>Projected Net Income</u>	<u>Net Income Less Dutch Payments</u>	<u>Net Income Less Dutch Payments After Cost Reductions</u>
1968	\$ 720,000	\$ 647,000	\$ 747,000*
1969	761,000	676,000	776,000
1970	947,000	851,000	951,000
1971	1,132,000	1,025,000	1,125,000
1972	1,318,000	1,282,000	1,382,000

(1) From Exhibit II

(2) Column (1) less values from Exhibit III

(3) Column (2) / \$100,000

* Hypothetical because acquisition and cost reductions would occur after Fiscal 1968.

EXHIBIT VII

Tanatex
Earnings Forecasts
Calendar Year Basis **

<u>Year</u>	(1)	(2)
	<u>Net Income Less Dutch Payments</u>	<u>Net Income less Dutch Payments After Cost Reductions</u>
1968	\$ 665,000	\$ 765,000**
1969	791,000	891,000
1970	965,000	1,065,000
1971	1,194,000	1,194,000

* Conversion to calendar year on straight basis using one-third of one fiscal year plus two-thirds of the next fiscal year.

** Because cost reductions would only occur for the portion of the year that Tanatex would be an RTR unit this figure would be reduced to about \$733,000.

(1) Column (2) Exhibit VI converted to calendar year basis.

(2) Column (3) Exhibit VI converted to calendar year basis

EXHIBIT VIII

Tanatex
Price Based on Net Income Less Dutch Payments

<u>Multiple Paid</u>	<u>Shares For Earnings *</u>	<u>Shares For Dutch Earnings</u>	<u>Total Shares</u>	<u>Total Cost</u>	<u>E.P.S.** Leverage</u>
15	294,090	8,606	302,696	\$ 9,989,000	.041
18	352,909	8,606	361,515	11,930,000	.031
21	411,727	8,606	420,333	13,871,000	.022

* Based on Fiscal 1968 earnings of \$647,000 (See Exhibit VI - Column 2) and RTR at \$33/ share.

** Based on Tanatex earning \$813,000 in Calendar 1968 and RTR earning \$1.460 on 8,700,000 shares.

EXHIBIT IX

TANATEX

Price Based on Net Income Less Dutch
Payments Plus Cost Savings

<u>Multiple Paid</u>	<u>Shares For Earnings*</u>	<u>Shares For Dutch Earnings</u>	<u>Total Shares</u>	<u>Total Cost</u>	<u>EPS Leverage**</u>
15	339,545	8,606	348,151	11,489,000	.034
18	407,454	8,606	416,060	13,730,000	.023
21	475,363	8,606	483,969	15,971,000	.012

* Based on Fiscal 1968 earnings of \$747,000 (See Exhibit VI - Column (3) and RTR at \$33/Share.

** Based on Tanatex earning \$813,000 in Calendar 1968 and RTR earning \$1,460 on 8,700,000 shares.

EXHIBIT X

TANATEX

Future Earning At Various Sales Growth Rates

Growth Rates

Sales

<u>Fiscal Year</u>	<u>Tanatex - 20%</u>	<u>15%</u>	<u>10%</u>
1968	\$ 6,311,000	\$ 6,311,000	6,311,000
1969	7,611,000	7,281,000	6,942,000
1970	9,467,000	8,373,000	7,636,000
1971	11,323,000	9,629,000	8,400,000
1972	13,180,000	11,073,000	9,240,000

Earnings @ 10% + \$100,000 Cost Reduction

<u>Fiscal Year</u>			
1968	720,000	720,000	720,000
1969	861,000	828,000	794,000
1970	1,047,000	937,000	864,000
1971	1,232,000	1,063,000	940,000
1972	1,418,000	1,207,000	1,024,000

Earnings on Calendar Year Basis

1968	813,000	790,000	768,000
1969	984,000	898,000	838,000
1970	1,170,000	1,021,000	913,000
1971	1,354,000	1,153,000	995,000

EPS on Maximum Shares - 484,000

1968	1.68	1.63	1.59
1969	2.03	1.86	1.73
1970	2.42	2.11	1.89
1971	2.80	2.38	2.06

EXHIBIT XI

TANATEX

Chemical P/E Multiples

<u>Company</u>	<u>Multiple (1)</u>
<u>TEXTILE AUXILIARY</u>	
Millmaster Oynx	13
Chemical Products Corp.	17
Synalloy Corp. (2)	24
Texize (3)	14 (1966)
<u>LARGE TEXTILE - CHEMICAL</u>	
DuPont	23
Cynamid	15
Monsanto	15
Celanese	13
<u>SPECIALTY CHEMICAL</u>	
Lawter Chemical	38
Fairmount Chemical	25
Phillip A. Hunt	31

- (1) As of February 1968 except for Texize
- (2) Now mostly in special metal fabricating machinery
- (3) On September 28, 1967 was acquired by Norwich Pharmaceutical for 34 times estimated 1967 earnings.

QUESTIONS FOR TANATEX

- 1) What have the payments from the Dutch affiliate for patent rights, etc. for each year and in what year do you expect these payments to end? Do you have plans to sell more rights in the near future? What are the details of the Profit Sharing plan elements profit sharing, pensions, and thrift incentive?
- 2) Who are the recipients of profit sharing? Can the profit sharing be eliminated, as proposed under public issue, without disrupting the organization? What is the expected profit sharing contribution for Fiscal 1968?
- 3) Through what years have you been audited by IRS.
- 4) For the first nine months of Fiscal 1968, what we called SAD expenses, selling, administrative, development, plus profit sharing and charitable contributions, were only 24.8% of sales. This is down from the 35.4% in 1967. What is the explanation for this precipitous decline?
- 5) Are the production workers unionized?
- 6) Could you provide a summary of fringe benefits other than profit sharing, their cost, participants, etc?
- 7) What is the sales volume capacity of existing plant?
- 8) Why is depreciation such a small percentage (6.3% in 1967) of fixed assets? For most manufacturing companies depreciation is about 10% of fixed assets.
- 9) What is the likelihood of maintaining an after tax profit margin of 11% as the product lines mature.
- 10) Could we have copies of the most current financial statements of your subsidiaries and a copy of the audited 1966 Balance Sheet?
- 11) Is there any revision in the forecasts for Fiscal 1968 of sales of \$6,311,000 and earnings of \$720,000?

TANAPCO X

Net Profits plus Depreciation less Capital Spending and Dividends.

DOLLAR & UNIT FIGURES	1969 (E)	1968 *	1967	1966	1965
Net Sales (000)	146.11	143.11	40.99	30.47	26.03
Net Profits	10.22	10.22	3.42	4.12	2.54
Total Assets	305.1	305.1	300.3	41.2	2.54
Fixed Assets	146.11	146.11	10.60	10.60	10.60
Capital Spending			3.82		
Funded Debt		15.6	1.72		
Net Worth		10.44	1.10		
Net Working Capital		10.44	1.10		
Annual Depreciation			1.1		
Net Cash Flow*			1.1		
No. of Shares Outstg.			10.00		
Book Value Per Share			13.41		
Earnings Per Share			2.54		
Cash Div. Per Share			1.50		
Common Stock Price					
PROFIT & SALE RATIOS					
Net Profit on Net Sales		1.44	8.4	11.2	9.5
Net Profit on Net Worth		3.10	21.2	27.5	37.7
Net Profit on Tot. Assets			10.7		
Sales to Net Worth			45.1		
Sales to Fixed Assets			36.2		
Gross Margin on Net Sales		16.7	45.9	46.2	44.8
SAD Expense to Net Sales		24.8	33.4	30.9	32.2
Effective Tax Rate			40.1	42.0	42.5
BALANCE SHEET RATIOS					
Current Ratio		1.9	1.7		
Cash & A/R to Cur. Liab.		1.2	0.9		
Funded Debt to N. W.		2.6	11.3		
Total Debt to N. W.		2.9	12.9		
Cost of Sales to Inv.			4.2		
Avg. Collection Period			47		
% Fixed Assets Depr.			6.3		
MARKET RATIOS					
Yield on Current Price					
Profit Payout					
Market Price to Book					
Price Earnings Ratio					
Total Market Value					
* Income statement figures are estimated based on 9 months actual balance sheet items for January 31, 1968.					

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40



see detail of
Service and
Maintenance Bldg.
on following pages

see detail of
Engineering Bldg.
on following pages

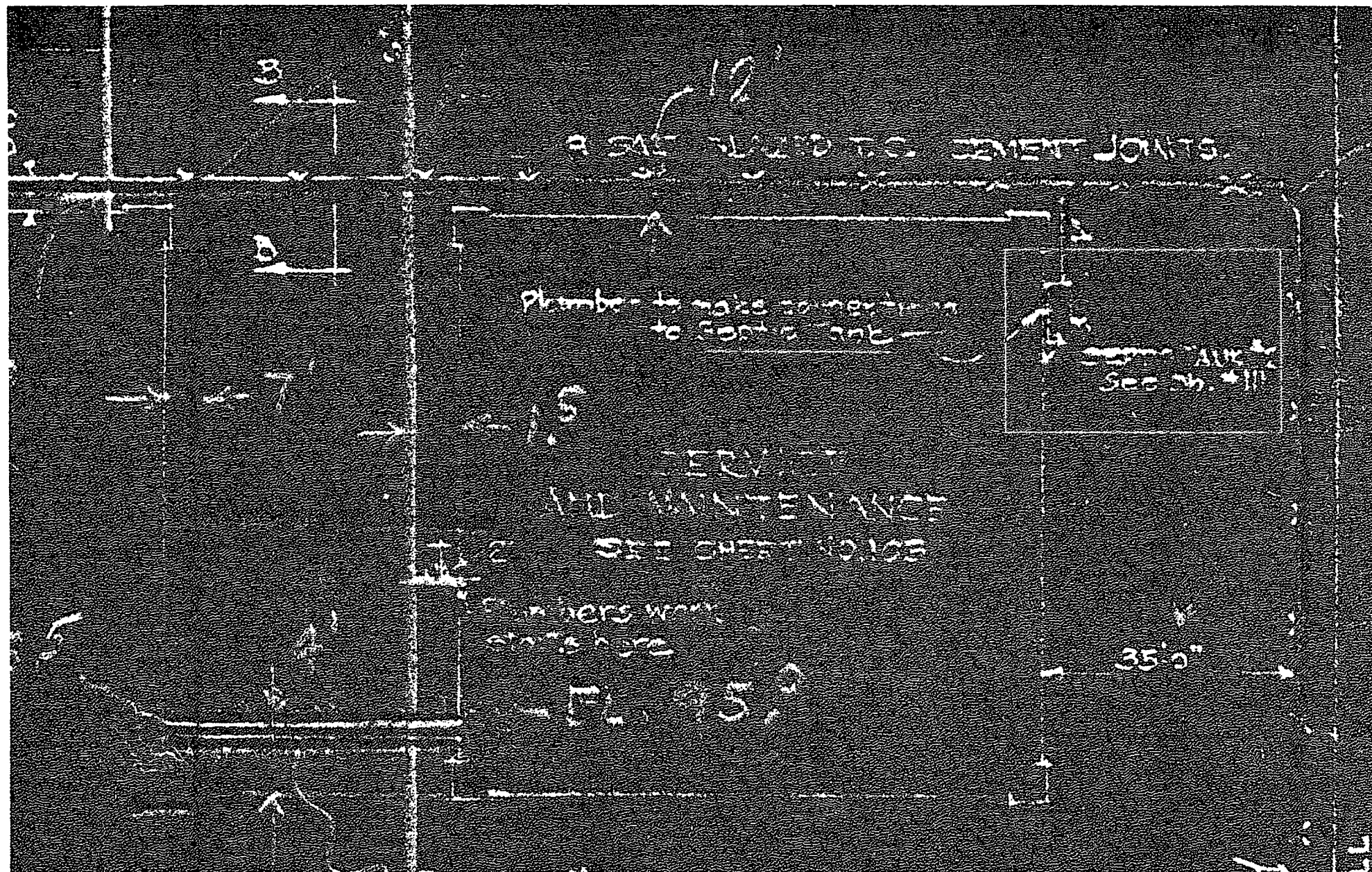
The Austin Company
NEW YORK — PHILADELPHIA
ENGINEERS AND ARCHITECTS

PLANS 19-142D-90720-110
PART 100-110-110-110
BUILDING 110-110-110-110

DATE	11-1-57
BY	J. L. Austin
CHECKED BY	J. L. Austin
APPROVED BY	J. L. Austin
CONTRACT NO.	110-110-110-110
PROJECT NO.	110-110-110-110
CLIENT	110-110-110-110

NO.	DESCRIPTION	DATE	BY	CHECKED
1	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
2	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
3	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
4	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
5	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
6	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
7	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
8	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
9	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin
10	110-110-110-110	11-1-57	J. L. Austin	J. L. Austin





263

SEW. 957
S.P.R. 926

4" Collector to Drain

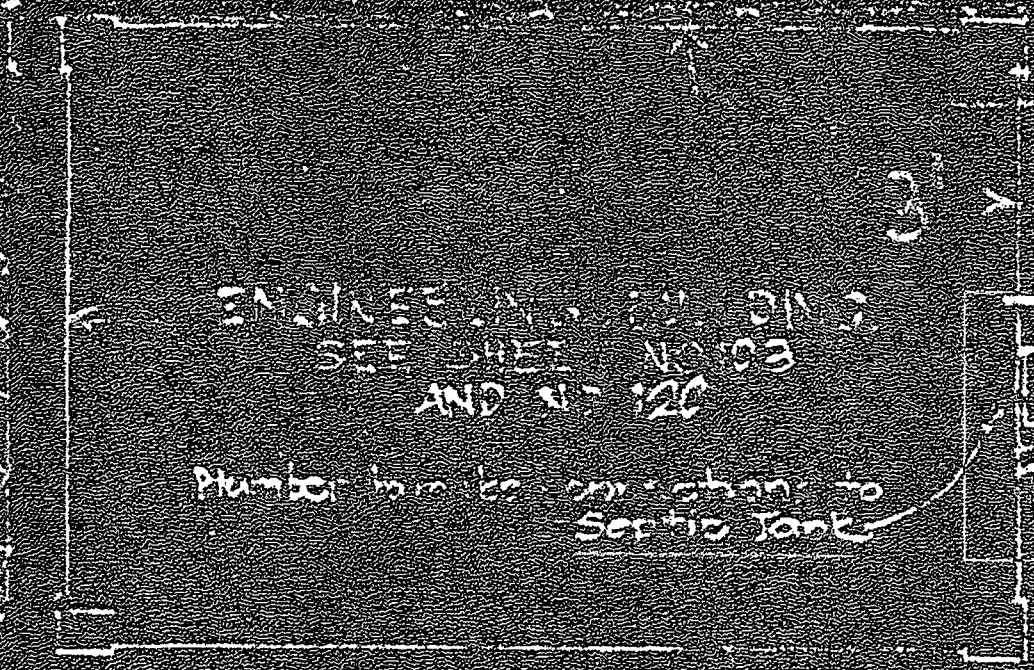
Elev. 9
W
Elev. 924
S.C. 122

ENGINEER AND ARCHT. ON D.
SEE SHEET NO 103
AND NO 120

Plumber to make connections to
Septic Tank

SEPTIC TANK #1
See ch. #111

Elev. 916 3
S.A. inlet and trap
if required





<i>Title: Records Management Policy</i>	<i>Supersedes: All prior versions</i>	<i>Total pages: 22</i>
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RECORDS MANAGEMENT POLICY

1. **POLICY** – It is the policy of Thermo Fisher Scientific, Inc. (“Thermo Fisher Scientific” or the “Company”) that the Company and all of its employees and people acting on behalf of the Company comply with the document retention and destruction policy set out herein (the “Records Management Policy” or “Policy”). The purpose of the Policy is to: (a) ensure the availability and accessibility of information required for business operations; (b) protect the legal rights of Thermo Fisher Scientific; (c) ensure compliance with customer requirements and federal, foreign, state and local laws and regulations; and (d) assist with audits, investigations and legal actions. The Policy also attempts to achieve cost savings by reducing the staff, equipment, warehouse and office space devoted to the storage of Records that are no longer required for business operations or legal obligations, while promoting the efficient retrieval of information and Records.
2. **SCOPE** – The Policy is applicable to all global divisions and majority-owned subsidiaries, and all Company employees, including salaried, hourly and contract employees. The Record Retention Periods set forth in **Appendix A** primarily reflect US legal and regulatory record retention requirements. These retention periods are minimum requirements for Thermo Fisher Scientific and may be superseded by foreign, federal, state or local regulations, or customer requirements if they require a longer retention period. Non-US employees should consult with their local country-specific attorney if they have questions regarding the applicability of a particular record retention requirement.
3. **DEFINITIONS** – The following definitions are used in this Policy:
 - 3.1 **Document Preservation Notice.** A Document Preservation Notice is the process or procedure implemented to stop or suspend the regularly scheduled destruction of Official Records and Transient Records when it has been determined that these Records are relevant to a litigation, investigation, audit or similar action. If suspension of the regularly scheduled destruction is required, the Legal Department will issue a Document Preservation Notice directing that certain designated Records be retained beyond the established Record Retention Period until further notice pending the outcome of the particular matter requiring the suspension.
 - 3.2 **Electronic Records or Electronically Stored Information (“ESI”).** Any information that is recorded in a form that only a computer or other equipment capable of reading electronic files can process, including but not limited to e-mail (including e-mails stored in PST files, also referred to as “personal folders”), voicemail, databases, computer back-up tapes and application files. Like paper documents, some Electronic Records/ESI will constitute Official Records, while other Electronic Records/ESI will constitute Transient Records.
 - 3.3 **Eligible for Destruction.** Records are Eligible for Destruction if the requisite Record Retention Period has elapsed AND the Record is not subject to a Document Preservation Notice.
 - 3.4 **Organizational Units.** All Thermo Fisher Scientific groups (e.g., ATG, LPG or CCG), divisions (e.g., SID, DXD, LCD, etc.), business units (e.g., an operating or legal entity), and corporate functional departments (e.g., Legal, Tax, HR, Finance, etc.).

- 3.5 **Record.** Any item recorded (regardless of the recording medium) or received in connection with the Company's business (e.g., e-mails wherever stored, correspondence, notes, records, memoranda, contracts, invoices, orders, reports, compilations, schedules, financial statements, brochures, drawings, diagrams, sketches, photographs, computer-stored or computer-readable data, facsimiles, etc.). For purposes of this Policy, all Records are deemed to be either Official Records or Transient Records. Further:

- 3.5.1 **Official Records.** Any Record that is reasonably likely to have importance for the ongoing business activities of the Company and that evidences an action, transaction or decision (e.g., signed contract, drawings, testing results, corporate policy, performance reviews, etc.) made by a Company employee. Generally, Official Records reflect the action, transaction or decision of the person or department creating the Record; however, some Official Records may be copies of an original that are provided to other employees and compiled and maintained for another business purpose.

All Official Records (and not Transient Records) are subject to a *Record Retention Period*.

Official Records may be Electronic Records/ESI, "active" (i.e., regularly referenced, necessary or required for current use in the routine course of daily business), or "inactive" (i.e., not regularly referenced, necessary or required on a regular basis in the routine course of daily business). Generally, active Records are stored onsite and inactive Records are, though not always, stored off-site by a records vendor.

- 3.5.2 **Transient Records.** Records of short-term value or copies (paper or electronic) of Records that are not important to the ongoing business activities of the Company. Although each Record must be considered on a case by case basis, examples of Records that might be Transient Records include certain draft documents, works in progress, convenience copies, non-substantive e-mails and voicemail messages.

- 3.6 **Record Retention Period.** The period of time during which Official Records must be maintained by an Organizational Unit for operational, legal, fiscal, historical or other purposes.

- 3.7 **Record Retention Schedule.** A comprehensive list of categories of Records attached as **Appendix A** indicating the length of time that Official Records must be maintained by the appropriate Organizational Unit responsible for originating and/or maintaining the Official Record. The specified retention periods are minimum requirements for Thermo Fisher Scientific and may be superseded by customer requirements, federal, foreign, state or local requirements, or to comply with "suspension" requirements set forth in this Policy.

4. **POLICY REQUIREMENTS**

- 4.1 **Employee's Daily Responsibilities** – All Company employees have a continuing obligation in the ordinary course of business to systematically review and dispose of all Records, both onsite and offsite, which are Eligible for Destruction. **No Records relevant to a Document Preservation Notice may be destroyed.** Specifically, employees should follow these guidelines:

- **Official v. Transient Records** – To determine if a Record is Eligible for Destruction or what Record Retention Period applies to a particular Record, employees must first determine if the Record is an Official Record or Transient Record. Official Records (whether electronic, "active" or "inactive") must be retained in accordance with the attached Record Retention Schedule (**Appendix A**). Unless there is a Document Preservation Notice in place, Official Records may be destroyed once the relevant Record Retention Period has come to an end. Transient Records may be destroyed at any time, but must be destroyed annually in accordance with Section 4.2. For examples of Official and Transient Records, see **Appendix H**.

- **E-mail/voicemail** – Electronic Records in the form of e-mail messages (including any attached files) and voice-mail messages are deemed to be Transient Records unless the holder of the item intends for it to be an Official Record and treats it as an Official Record. If an e-mail or voicemail is intended to be treated as an Official Record, the holder may print it to paper or save it to a specifically designated electronic directory (e.g., a PST file or personal folder) and retain it according to the applicable retention period for that particular category of Official Record. Merely printing an Electronic Record or voicemail does not make it an Official Record.
- **Other Electronic Records** – Except for e-mail/voicemail, all other Electronic Records/ESI are considered Official Records. Accordingly, these Records should be treated in the same way as any other Official Records, and retained in accordance with the Record Retention Schedule, depending upon the type of Records they are.
- **Assistance** – If in doubt as to whether a Record is Eligible for Destruction, the employee should consult the DIRECTOR OF RECORDS MANAGEMENT. If in doubt as to whether a Record is subject to a Document Preservation Notice, the employee should consult the Legal Department immediately.
- **Off-Site Records** – Where Records that are Eligible for Destruction are stored off-site, employees should complete a Records Disposal Form (**Appendix B**). Records Managers (or their designees) shall work with the records vendor in order to identify all Records that are stored offsite in their Organizational Unit that are Eligible for Destruction. The Records Disposal Form shall include a description of the Records (including the Records' proposed destruction date) and be signed by the employee and Records Manager. Records Managers (or their designees) shall be responsible for (i) notifying the records vendor which Records on the Records Disposal Form are Eligible for Destruction; and (ii) maintaining copies of the Records Disposal Form(s).

4.2 Annual Records Review – All Company employees are required annually to review all of their Records by **December 31st** (additional instructions are attached on **Appendix C**). During the Records review period, employees must examine all files, **whether (i) in paper or electronic form, and (ii) stored onsite or offsite**, and do the following:

- **Dispose of Transient Records** – Employees shall dispose of all Transient Records that have not been destroyed in the ordinary course of business in accordance with Section 4.1, are not active or are no longer useful.
- **Maintain Official Records** – Official Records should be retained in a designated onsite location or transferred offsite to the records vendor for the duration of their Record Retention Periods. Records Managers or their designees shall maintain documentation related to offsite storage transactions, including copies of documents generated by the records vendor. Records Managers must keep a current index of Official Records stored off-site with a copy sent to the Director of Records Management for each of their business units.
- **Dispose of Records Eligible for Destruction** – During the annual Records review, employees shall identify all Records which are Eligible for Destruction pursuant to the Record Retention Schedule. Those Records that are Eligible for Destruction shall be destroyed in accordance with the procedures set forth above.
- **Employee Certification** – Employees will be required to certify **annually** no later than **December 31st** that they have conducted a Records review that complies with this Policy. Employees who fail to do so may not be eligible for an annual pay increase.

4.3 Document Preservation Notices – Record Retention Periods may be lengthened and disposal dates suspended because of a pending or threatened audit, investigation, subpoena, government inspection, or litigation. If such a matter arises, the Legal Department will issue a Document

Preservation Notice identifying the Records or categories of Records to be withheld from destruction. An example of a Document Preservation Notice is attached as **Appendix D**.

- **No Records relevant to a Document Preservation Notice may be destroyed.** Once a Document Preservation Notice has been issued, all notified employees and Records Manager(s) shall segregate and conspicuously mark the relevant Record(s) so as to prevent destruction of the Record(s) pending resolution of the matter. The Records Manager(s) shall also notify the Legal Department of those employees in his/her Organizational Unit who may possess Records subject to the Document Preservation Notice but may not have received the initial notice. Records subject to a Document Preservation Notice shall be preserved until the Legal Department indicates that the Document Preservation Notice is no longer valid and thus the Records are again subject to the Record Retention Schedule.
- Employees may request a Document Preservation Notice of any Record based upon their knowledge of, among other things: 1) a business need; 2) the commencement of any legal investigation, lawsuit or claim; 3) the commencement of any tax investigation; and/or 4) the existence of a contractual or legal requirement that differs from the existing Record Retention Schedule. Employees shall submit a Document Preservation Notice request (using the attached **Appendix E**) to the Director of Records Management at RecordsCRO@thermofisher.com for any business or legal purpose, or to the Tax Department for tax purposes. The Tax Department shall review and forward all tax-related Document Preservation Notice requests to the Director of Records Management with a recommendation concerning suspension approval. The Director of Records Management will contact the employee who submitted the request and assist in issuing a Document Preservation Notice if needed.
- **All employees are responsible for notifying the Legal Department immediately of any actual or threatened event that might require issuance of a Document Preservation Notice. Destruction, alteration, or disposal of any relevant Records before the Legal Department notifies employees that they are no longer needed may constitute obstruction of justice, a felony that can result in substantial fines and/or imprisonment. It may also result in disciplinary action up to and including termination.**

4.4 **Record(s) Manager Compliance Certification** – Records Manager(s) shall execute a compliance certification (in substantially the same form as attached **Appendix F**) on an annual basis. The certification shall be forwarded to the Director of Records Management no later than **December 31st**. The Director of Records Management will maintain this written compliance certification.

5. ORGANIZATION AND OVERSIGHT OF THE POLICY

5.1 **Legal Department** – The Legal Department shall be responsible for establishing and enforcing the guidelines in this Policy. The Legal Department will designate a Director of Records Management who shall be responsible for assisting all Organizational Units in implementing this Policy. The Director of Records Management's responsibilities are described on **Appendix G**. Any questions, comments or requests concerning this Policy can be directed to the Director of Records Management via email at RecordsCRO@thermofisher.com.

5.2 **Records Manager(s)** – Each Organizational Unit shall designate one or more Records Manager(s) who shall be responsible for implementing, managing and ensuring compliance with this Policy for that person's Organizational Unit. The Records Manager's responsibilities are described on **Appendix G**. Each Organizational Unit shall provide the name(s) of the Records Manager(s) to the Director of Records Management.

5.3 **Information Technology (IT) Department** – The IT Department is responsible for creating data maps of electronic systems in their respective Organizational Units. The IT Director for each Organizational Unit shall act as the Records Manager for all Electronic Records maintained by that Organizational Unit.

5.4 **Tax Department** – The Tax Department is responsible for ensuring compliance with all applicable tax-related statutes, regulations and activities and shall review all tax Records subject to an Internal Revenue Service (IRS), or other equivalent legislative body, regulation.

5.5 **Outside Records Management Vendor** – Thermo Fisher Scientific may designate a single records vendor for the offsite storage, delivery, retrieval and disposal of Official Records. Organizational Units that are unable to use the recommended vendor shall notify the Director of Records Management and Thermo Fisher Scientific's Sourcing Department ("Sourcing") of the local vendor they wish to use. Records Managers will communicate directly with the records vendor for purposes of carrying out record retention functions. Organizational Units should refer to the Contract Review Guidelines and notify Sourcing before executing separate contracts with local vendors.

6. GENERAL

6.1 **Quality System Considerations** – All record retention program systems developed under the auspices of customer requirements, ISO certification, QS certification, or any other equivalent quality system must be reconciled with this Policy without jeopardizing such certification. Upon notification, the Legal Department will work with the appropriate department to reconcile any conflicts.

6.2 **Merger & Acquisition Records** – All Records acquired by Thermo Fisher Scientific in a merger or acquisition shall be kept for the minimum period, if any, stated in the relevant transaction agreement. If no minimum period is stated in the agreement, such Records shall be kept for a minimum of seven (7) years from the date of Thermo Fisher Scientific's acquisition of the target company. After the expiration of the stated retention period, Official Records shall be retained in accordance with the retention periods set forth in **Appendix A**.

6.3 **Training** – Records Managers will be responsible for working with the Legal Department and the Director of Records Management to train individuals within their respective Organizational Unit in connection with the implementation of this Policy.

6.4 **Changes to the Record Retention Schedule** – If an employee has a question about the Record Retention Schedule or becomes aware of a requirement that would necessitate a modification to the Record Retention Schedule, including revisions to the assigned Record Retention Periods or deletions or additions to the retention categories, the employee shall contact the Director of Records Management at RecordsCRO@thermofisher.com. The Legal Department will review each request and update the Record Retention Schedule as necessary. The Legal Department shall be responsible for maintaining and interpreting the Record Retention Schedule.

7. FORMS/RELATED DOCUMENTATION

Appendix A – Record Retention Schedule

Appendix B – Records Disposal Form

Appendix C – Annual Records Review Summary

Appendix D – Document Preservation Notice

Appendix E – Record Retention Document Preservation Notice Request Form

Appendix F – Certificate of Compliance

Appendix G – Director of Records Management and Records Managers' Responsibilities

Appendix H – Examples of Transient and Official Records

Effective Date: January 1, 2008	Policy Owner: Legal Department
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Appendix A - Records Management Policy

Records Retention Schedule

- The copy of the documents to be retained is the copy which is considered the *official record* copy. Other copies should not be retained after they have served their original purpose.
- For correspondence (including memoranda, notes, etc.), the record retention requirements set forth below will govern. For correspondence, other than those types with specific *record retention periods*, the Policy limits retention to the period required for actual business use. *Transient records* should be destroyed according to the provisions set forth in the Policy.
- The Policy is applicable to all global divisions and majority-owned subsidiaries, and all Company employees, including salaried, hourly and contract employees. The Record Retention Periods set forth in **Appendix A** primarily reflect US legal and regulatory record retention requirements. These retention periods are minimum requirements for Thermo Fisher Scientific and may be superseded by foreign, federal, state or local regulations, or customer requirements if they require a longer retention period. Non-US employees should consult with their local country-specific attorney if they have questions regarding the applicability of a particular record retention requirement.

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
General Corporate	Records of incorporation, by-laws & amendments for the corporation and its subsidiaries	Permanent
General Corporate	Qualifications to do business in states & related records	Permanent
General Corporate	Corporate seals	Permanent
General Corporate	Cancelled stock certificates/cancelled bonds	25
General Corporate	Stock transfer and stockholder records	10
General Corporate	Dividend records	Permanent
General Corporate	Minute books of corporate and subsidiary boards, board committees and stockholder meetings	Permanent
General Corporate	Annual reports, quarterly reports, proxy material - SEC	Permanent
General Corporate	Earnings releases/financial information to investors	Permanent
General Corporate	Shareholder proxies	10
General Corporate	Shareholder lists for annual/special meetings	7
General Corporate	Proxy tabulations	7
General Corporate	Acquisition/Merger files and related due diligence	Permanent
General Corporate	Divestiture files	Permanent
General Corporate	SEC-related material: financing documents, credit agreements, loan agreements, commitments, etc.; 10-Q 10K Workpapers	Active + 10
General Corporate	Major corporate and divisional policy & procedure manuals	Active + 10
General Corporate	External speeches by corporate officers	Active + 2
General Corporate	Material of historical value (pictures, publications)	Permanent
General Corporate	Charitable contribution records	7
General Corporate	QBR's – Quarterly Business Reviews	3
General Corporate	AOP's – Annual Operating Plans	3
General Corporate	Strategic Plans	4
General Corporate	BUS DEV – Business Development analyses, reports, presentations, research data	3
Correspondence	E-Mails - transient emails	Destroy
Correspondence	E-Mails – official record emails	Applicable retention period for that official record category
Correspondence	Routine letters/notes that require no follow-up or acknowledgement	1 year or less
Correspondence	Form letters that require no follow-up	1 year or less
Correspondence	Interdepartmental or other company correspondence	1 year or less
Correspondence	Letters of general inquiry which complete a cycle of correspondence	1 year
Correspondence	Chronological files	1 year
Correspondence	Letters explaining, but not establishing, company policy	5

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
Correspondence	Quotation letters where no contract results	6
Correspondence	Letters re: liability of the company denied	Refer to Legal Dept.
HR/Personnel	HRR's – Human Resource Reviews (manpower report/assessments of potential/strengths, etc.)	2
HR/Personnel	Original union agreements	Permanent
HR/Personnel	Invention assignment forms	Permanent
HR/Personnel	Employee files: attendance records; applications; resumes; offers of employment; performance evaluations; job descriptions; education & training records; exit interviews; termination/resignation	4 years after termination (review with Legal prior to destruction)
HR/Personnel	Medical histories and health data, including industrial hygiene monitoring results	Longer of 40 yrs or 30 yrs after termination
HR/Personnel	Individual employment contracts	7 yrs after termination
HR/Personnel	Employee relocation (household moves)	Active + 3
HR/Personnel	Affirmative action programs	Active + 5
HR/Personnel	Records of employed minors	Active + 3
HR/Personnel	EEO-1 and EEO-2 employer information reports	3
HR/Personnel	INS Employment eligibility verification for I-9; check of restricted party list outcomes	Longer of 3 yrs from date of hire or 1 yr after termination
HR/Personnel	Non-hires: applications, resumes, results of pre-employment physicals and related correspondence	3 yrs from date of non-hire (review with Legal Dept.)
HR/Personnel	Correspondence w/employment agencies; advertisements for job openings; any documents indicating selection criteria for filling positions	Active + 1
HR/Personnel	Wage & salary records/time cards	4
HR/Personnel	Garnishments	4
HR/Personnel	Census reports/headcount comparisons	3
HR/Personnel	Employee handbooks and training manuals	Active + 10
HR/Personnel	Requests for leave under FMLA and related documents	Active + 3
HR/Personnel	Records of temporary contractors not employed by Thermo Fisher	Active + 2
Pension/EB	Pension plans and amendments thereto	Permanent
Pension/EB	Service eligibility records/earnings records	Permanent
Pension/EB	Pension plan determination letters	Permanent
Pension/EB	Required personal information on employees/former employees (name, address, social security number, period of employment, pay, etc.)	Permanent
Pension/EB	Record of pension paid to employees or their beneficiaries	Active + 6
Pension/EB	Form 5500's – report of pension plans filed with the IRS or those filed with the DOL	Active + 6
Pension/EB	Reports of plan administrator setting forth authority to pay	Permanent
Pension/EB	ERISA packages	10
Pension/EB	Pension trust statements	10
Pension/EB	Pension trust agreements	Active + 10
Pension/EB	Employee Benefit plans other than pension	Active + 10
Pension/EB	Workers Comp Files (Claims)	Active + 7
Accounting/Finance	SEC filings – 10-K, 10-Q, 8-K, S-1, etc.	Permanent
Accounting/Finance	Financial statements – Audited	Permanent
Accounting/Finance	Monthly financial statements	7
Accounting/Finance	Accounts Payable – year end vendor master file	10
Accounting/Finance	Accounts Payable – vendor invoices	7
Accounting/Finance	Accounts Payable – employee expense reports	7
Accounting/Finance	Accounts Payable – Cancelled Checks	7
Accounting/Finance	Accounts Receivable – year end customer master file	10
Accounting/Finance	Accounts Receivable – customer invoices	7

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
Accounting/Finance	Accounts Receivable – lockbox receipts	7
Accounting/Finance	Credit – application for credit, approval forms, credit reports	Active + 1
Accounting/Finance	Credit – customer financial statements	3
Accounting/Finance	Credit – collection correspondence	7
Accounting/Finance	Credit – bad debts (written off)	Active + 3
Accounting/Finance	Credit – collection litigation files	Active + 3
Accounting/Finance	Credit – security agreements/financing statements/ letters of credit	Active + 3
Accounting/Finance	General Ledgers	Permanent
Accounting/Finance	Year end detail file; year end company master chart of accts	Permanent
Accounting/Finance	Journal Entries	10
Accounting/Finance	Account reconciliations	10
Accounting/Finance	LIFO inventory reports	Permanent
Accounting/Finance	Fixed Assets master file year end	Permanent
Accounting/Finance	Departmental budgets and related work sheets	7
Accounting/Finance	Depreciation schedules	Permanent
Accounting/Finance	Payroll – pay ending weekly runs	4
Accounting/Finance	Payroll – payroll deductions/auth/credit union/union dues	4
Accounting/Finance	Payroll – time sheets/time cards	4
Accounting/Finance	Payroll – payroll registers	7
Accounting/Finance	Payroll – monthly distribution journals	7
Accounting/Finance	Payroll – cancelled checks/direct deposit cd's	7
Accounting/Finance	Payroll – W-2's	7
Accounting/Finance	Payroll – W-4's	Active
Accounting/Finance	Payroll – 1099-M's or 1099-R's	7
Accounting/Finance	Payroll – 940/941 Tax filings	7
Tax	Federal Income Tax returns – 1120's and workpapers	Permanent
Tax	IRS Audit reports	Permanent
Tax	Federal Income Tax supporting schedules	Permanent
Tax	State income tax returns	10
Tax	Local income tax returns	10
Tax	State & local audit reports	10
Tax	State sales and use tax records	10
Tax	State and local property tax records	10
Tax	State and local franchise tax records	10
Tax	Intercompany pricing documentation-U.S. transfer pricing reporting packages and details	20
Tax	Foreign financial filings	20
Tax	Ownership and capital structure records	20
Tax	Intercompany records including loan documentation; currency risk or interest rate risk shifting or other hedging; contracts for intercompany services	20
*Audits	Inspections/Audits by government agencies	7
Internal Audit	Internal Audit correspondence	7
Internal Audit	Internal Audit reports and workpapers	7
Internal Audit	Sarbanes-Oxley compliance	7
Internal Audit	Audit schedules	7
Treasury/Cash Mgmt	Daily cash reports	7
Treasury/Cash Mgmt	Cash transfers	7
Treasury/Cash Mgmt	Bank statements/reconciliations	7
Treasury/Cash Mgmt	Investments/borrowings	7
Contracts	Contracts, including amendments, renewals – commercial	Contract and warranty period + 6
Contracts	Contracts, including amendments, renewals – government	Contract and warranty period + 6

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
Contracts	Contracts, including amendments, renewals – independent contractors	Contract and warranty period + 6
Purchasing	Purchase orders	Active + 7
Purchasing	Requisitions	7
Purchasing	Quotation	7
Purchasing	Vendor correspondence	7
Purchasing	Vendor/supplier pricing changes	7
Purchasing	Vendor certifications/warranties	Permanent
Sales/Marketing	Customer order files – including P.O., sales and price agreements, on-line orders, sales & analysis reports	Contract or P.O. + 6
Sales/Marketing	Requests for proposals (RFP's)	10
Sales/Marketing	Price books	10
Sales/Marketing	Price agreements	Active + 6
Sales/Marketing	Frozen price list	Active + 6
Sales/Marketing	Price book requests	Active + 6
Sales/Marketing	Rebate contracts	Active + 6
Sales/Marketing	Account moves	Active + 6
Sales/Marketing	Item discounts	Active + 6
Sales/Marketing	Transportation changes	Active + 6
Sales/Marketing	RGA (returned goods allowances)	10
Sales/Marketing	Market investigations/reports/research data	10
Sales/Marketing	Profitability runs by catalog # or vendor #	10
Sales/Marketing	Sales advertising copy/marketing programs	5
Sales/Marketing	Copies of packaging materials/instructions	5
Sales/Marketing	Catalogs	Permanent
Sales/Marketing	Catalog backup – vendor approvals/certifications	Permanent
Sales/Marketing	Catalog backup – internal approvals/responses/certifications	10
Sales/Marketing	Catalog proofs/films of pages	10
Sales/Marketing	Job folders	10
Sales/Marketing	Special project files	10
Sales/Marketing	External publications (Lab Reporter, Biotrack, Safetytrack)	10
Sales/Marketing	Internal publications (employees – Fisher News, Fisher Circle, Thermo Fisher updates)	10
Sales/Marketing	Customer Correspondence	7
Traffic/Transportation	Shipping instructions	5
Traffic/Transportation	Manifests	5
Traffic/Transportation	Packaging and labeling instructions	Life of design + 7
Traffic/Transportation	Packing lists	5
Traffic/Transportation	Freight bills and records – Domestic	3
Traffic/Transportation	Freight bills and records - Export	7
Traffic/Transportation	Bills of lading (Thermo Fisher as shipper)	5
Traffic/Transportation	Waybills and receivers	5
Traffic/Transportation	Freight claims – Domestic	3
Traffic/Transportation	Freight claims – Export	7
Traffic/Transportation	Rates and tariffs	Active + 1
Intellectual Property	Original patents and patent assignments	Life + 6
Intellectual Property	Original trademark registrations and related prosecution	Life + 1
Intellectual Property	Patent prosecution files (non-public records/supporting docs)	Date of last patent family member granted
Intellectual Property	Laboratory notebooks and supporting/test data	10 (review with Legal)
Intellectual Property	Non-disclosure agreements, unilateral or mutual, including those without a defined term	Active + 2; minimum 5 years
Intellectual Property	Copyright registrations	Until expired
Intellectual Property	Copyright permissions for use of others' copyrighted material and other inbound transfers of rights in creative works	Active use + 3

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
Intellectual Property	Permissions granted to a third party to use any Thermo Fisher copyright material	10
Intellectual Property	Royalty payment records (on inbound licenses)	Report period + 3, unless specified longer by contract
Intellectual Property	License agreements in or out, including production and royalty receipt records (for outbound licenses)	Active + 6
Intellectual Property	IP disputes/proceedings: patent or trademark interference, infringement, misappropriations, opposition, conflict nullity action, revocation or protest files (rights retained) by us or against us	Settlement + 7
Intellectual Property	Accusations of potential infringement by us or against us and related correspondence	10
Intellectual Property	Freedom to operate analyses in active product areas	Date of analyses + 5; 20 yrs maximum from date of analyses (within this range, life of product + 5)
Intellectual Property	Freedom to operate analyses in product areas not active or discontinued	Date of analyses + 5
Intellectual Property	Third party submission of new product ideas to Company	10
R & D	Design history file (R&D record of the product development including all regulatory and safety testing and approvals)	Life of product + 10
R & D	Device Master Record (record of all documents released to manufacturing for production of the product)	Life of product + 10
Information Technology	E-Mails – transient emails	Destroy
Information Technology	E-Mails – official record emails	Applicable retention period for that official record category
Information Technology	Software licenses	Active + 6
Information Technology	Development agreements	Active + 6
Information Technology	System development request forms	Active + 2
Information Technology	Program change test plans and results	Active + 2
Information Technology	System problems	Active + 2
Information Technology	Breach of system security records	Active + 2
Information Technology	System audit records/system changes	7
Information Technology	Changes to user ID's/passwords/roles/security access	Active + 2
Information Technology	Hardware contracts/systems contracts	Active + 6
Information Technology	Website development/historical documents	Permanent
Information Technology	Web pages saved on local hard drives or networks	6 months
Information Technology	Word, Excel, Powerpoint files (past usefulness)	1
Information Technology	Sound/movie files downloaded for business purpose	1
Information Technology	Voicemail (Heard)	7 days
Information Technology	Voicemail (Unheard)	21 days
Engineering	Product design, engineering proposals, tooling, specifications, research data, inspection reports including initial sample approval documents, safety and performance test and engineering studies	20
Engineering	Drafting records, drawings, and engineering notebooks	20
Engineering	Engineering specifications and procedures	20
Engineering	Engineering change requests and engineering change notices	10
Pharmaceutical Records	Resident or Non-Resident Pharmacy Licenses	Active + 7 years
Pharmaceutical Records	Paper prescription orders	7 years from date dispensed
Pharmaceutical Records	Record of drug dispensed	7 years from date dispensed
Pharmaceutical Records	Electronic prescriptions/data received – (incl. Original scripts, refill authorizations, drug orders in original format via fax, phone, computer, modem, etc.)	10 years from date received

Type of Record	Description / Category of Official Records	Record Retention Period (Years)
EHS	Form R – Community Right to Know (including supplementary information)	3
EHS	SARA Title 302 Sec. 311, 312, 313 submissions/proof of submission	Date submitted + 3
EHS	Regulatory training records: including RCRA; DOT hazmat; bloodborne pathogens; asbestos training; new employee orientation (s/b in personnel files)	Employment + 3
EHS	RCRA contingency plans	Active
EHS	Emergency action plans/spill response plans	Active
EHS	Spill reports	10
EHS	Facility Audits – open items, corrective actions	5
EHS	State and local specific safety and environmental records	Retention periods vary depending upon jurisdiction, substance, pollutant, process, issue, etc.; verify retention period by state with Regulatory or Legal
Insurance/Risk Mgmt	Policies: workers compensation; product liability; umbrella; general liability; excess liability; environmental liability; third party liability	Permanent
Insurance/Risk Mgmt	Policies: property; fidelity & crime; D&O liability	Active + 7
Insurance/Risk Mgmt	Unemployment insurance and unemployment comp	Permanent
Insurance/Risk Mgmt	Certificates of insurance issued on behalf of the Company to others	3
Insurance/Risk Mgmt	Certificates of insurance issued to the Company by vendors, contractors, others on Thermo Fisher premises	Active + 10
Insurance/Risk Mgmt	Group EB insurance plans (retirees)	Permanent
Insurance/Risk Mgmt	Claims files/group life/group health/long term disability	Permanent
Insurance/Risk Mgmt	Insurance audits/adjustments	Active + 2
Insurance/Risk Mgmt	Automobile claims	Active + 3
Insurance/Risk Mgmt	Claims files/workers comp/first party/other 3 rd party/ product liability	Active + 7
Insurance/Risk Mgmt	Releases/Settlements	25
Insurance/Risk Mgmt	Inspections	3
Insurance/Risk Mgmt	Loss runs/annual loss summaries	7
Insurance/Risk Mgmt	Journal entry support data	7
Insurance/Risk Mgmt	Employee insurance records/claims	Termination + 10
Property	Real Property – original purchase, sale or lease agreement of facility	Permanent
Property	Real Property – blueprints, engineering drawings, building layout of purchased or leased facility	Permanent
Property	Real property – correspondence, property deeds, easements, licenses, rights of way, miscellaneous docs and blueprints/engineering drawings pertaining to SOLD facility	Sale date + 10
Property	Real property – mortgages	Active + 10
Property	Maintenance and repair – building	10
Property	Personal property – equipment usage, status reports, maintenance and repairs	5
Property	Personal property – equipment lists/depreciation	Active + 7
Legal	Antitrust investigations by the Federal Trade Commission, Department of Justice, or other Federal or state investigations	20
Legal	Assignments	Life of the assignment
Legal	Commercial claims (no litigation)	Settlement + 7
Legal	Consumer claims (no litigation)	Settlement + 7

Appendix B – Records Management Policy Records Disposal Form

Date _____		Page ____ of ____	
From: Employee _____		Organizational Unit: _____	
Print Name			
To: _____ (Records Manager or designee)			
<p>The following list of Records is eligible for destruction according to Thermo Fisher Scientific's Record Management Policy and the corresponding Record Retention Schedule. These Records are not related to any Document Preservation Notice.</p>			
Organizational Unit/Division	Record Description	Records Date	Destruction Date
Authorization Of Destruction (To be signed by the Employee and the Records Manager or designee)			
<p>The Records described above shall be destroyed in accordance with Thermo Fisher Scientific's Record Management Policy upon the Destruction Date listed above.</p>			
Date: _____		_____ Employee	
Date: _____		_____ Records Manager	

Appendix C – Records Management Policy

Annual Records Review Summary & Employee Certification

During the records review period, employees must examine all files **whether (i) in paper or electronic form, and (ii) stored onsite or offsite**, and do the following:

- Destroy Transient Records that have not been disposed of in the ordinary course of business, unless subject to Document Preservation Notice or, prior to a suspension, if any Thermo Fisher Scientific employee learns of the existence of a pertinent lawsuit, investigation, claim or similar issue as set forth in Section 4.3 of the Thermo Fisher Scientific Record Management Policy.
- Designate Official Records as active or inactive.
- Transfer inactive Official Records to a storage location, onsite or offsite, for the duration of the applicable Record Retention Period. All written documentation, if any, concerning the transfer of Records to the records vendor shall be provided to the Records Manager or his/her designee. Active Official Records shall be retained on-site.
- Identify all active or inactive Records which are Eligible for Destruction and dispose of such Records in accordance with the procedures set forth in Section 4 of the Policy. **Before destroying or designating a Record Eligible for Destruction, employees must first confirm that the Records they intend to destroy are not subject to suspension by reviewing any Document Preservation Notices they may have received. If an employee has any doubt as to whether a Record is subject to suspension, the employee should consult the Legal Department immediately.**

***NOTE:** The onsite or offsite storage or disposal of Records in accordance with the Record Retention Schedule and the Record Management Policy (including Document Preservation Notices) may occur at anytime, e.g., facility closing, move or reorganization, but must occur, and be reported to the Director of Records Management, at least annually.

Appendix D - Records Management Policy Document Preservation Notice

NOTE: Document Preservation Notices should be sent by e-mail to the Records Manager, IT Director, senior management, group and division counsel of the appropriate Organizational Unit(s), and to all employees who may possess relevant records.

E-Mail Subject Line: RE: ATTORNEY-CLIENT PRIVILEGE - (Name of Case)

DOCUMENT PRESERVATION NOTICE – IMMEDIATE ACTION REQUIRED **DO NOT ALTER OR DESTROY RELEVANT DOCUMENTS**

The Company (or specify business unit) has been notified of a (potential, threatened or actual) lawsuit filed by (plaintiff) in the (court) (or audit, investigation, subpoena, government inspection, etc., as appropriate). Plaintiff seeks (relief demanded) for alleged (briefly describe claims/case status). (Name of attorney/firm) has been retained to represent the Company in this matter. **With notice of this legal action, the Company is required by law to retain and preserve until further notice any and all documents, records and physical evidence that relate in any way to this claim. Normal record retention guidelines are therefore suspended with respect to all documents relevant to this matter until further notice.**

Relevant Documents

You are to take immediate steps to gather, save and preserve any and all records, documents or other materials, *including emails, .pst files and all other information stored in electronic form* (collectively hereafter, "Documents"), relating to this litigation. These records, documents and materials include, but are not limited to, the following:

- documents regarding . . . (bullet point the categories of documents required)

This list is not intended to be exclusive. If you are aware of or possess other documents or materials that you believe may be relevant to the lawsuit in light of the information contained in this correspondence, please take immediate steps to preserve them.

Obligation to Preserve Documents

This document preservation requirement applies to all relevant documents, regardless of medium or format (e.g., hard copies, computer records including copies of hard drives and back-up tapes, e-mail including back-up tapes, voice mail, video or audio tapes), and regardless of location (e.g., in your office, at home, in your car or elsewhere). The term "documents" is very broad, and means every written, printed, typed, recorded, reported, electronic, computer or graphic record or other written material, including, but not limited to, all correspondence, communications, agreements, contracts, drafts or proposed contracts or agreements, reports, summaries, agenda, computer printouts, personal calendars or date books, handwritten notes, intra-company memoranda, telephone message pad notes and other telephone records, invoices, statements, receipts, evidence of payment, bills, expense reports, and cancelled checks. Documents and files should not be deleted, even if known to be duplicates of documents held by you or other persons, and even if the duplicate has notes or handwritten comments on it.

The scope of the electronically stored information ("ESI") that must be identified and preserved without alteration is also very broad, including all e-mails, .pst files, word processing files, pictures, databases, data files, archive files, preserved voice mail messages, and metadata, and encompassing all office, home, and portable computers/devices, such as laptops, Palm Pilots and Blackberries, all hard drives, servers, backup systems, customer-based information systems utilized by our employees, external electronic drives and disks, CDs, ZIP and flash drives, cell phones, multi-media devices, and audio and video tapes. Please involve appropriate IT personnel in this process to ensure compliance regarding preservation of electronic data. IT personnel should review their efforts to preserve ESI with our outside counsel on the case.

Because metadata can sometimes be inadvertently altered or destroyed by booting a computer, accessing a file, changing a file's format, or printing a document, IT personnel must be involved from the outset to ensure preservation of all application and system metadata in its current form. In addition, because data stored on electronic backup systems can be required to be disclosed under certain circumstances, IT personnel will need to be involved in reviewing immediately the need to impose at least temporary suspensions on rotation of backup tapes and other practices that would destroy stored electronic data pending preliminary evaluation of the potential need to produce such backup data.

Destruction, alteration, or disposal of any relevant records before a Company attorney notifies you that they are not needed for this matter may constitute obstruction of justice, a felony that can result in substantial fines and/or imprisonment. It may also result in disciplinary action against you up to and including termination. Normal record retention guidelines for the above-described documents and data are suspended pending the resolution of this claim. This document preservation requirement supersedes any routine document destruction or handling procedures that might be in place. For example, computer programs that might delete relevant electronic data and e-mails should be modified or suspended immediately.

Instructions Regarding Preserving Documents

1. Gather, segregate and preserve all existing hard copies of the documents identified above, including draft versions and materials containing notes or handwritten comments.
2. Create a new archive email folder in your Personal Folders entitled "(Case Name) Document Preservation Order," and move to that folder all sent or received emails (including deleted emails still residing in your system) and attachments relevant to the subject matters identified above to prevent against their inadvertent deletion.
3. Copy and retain all electronic documents pertaining to the subject identified above in a separate folder labeled "(Case Name) Document Preservation Order."

Communications

Please forward this directive by urgent email, with a copy to me, to any other persons within the Company who might have knowledge about this matter and relevant Documents or other evidence, and request that they confirm by email their receipt of the communication.

While this matter is pending, all communications regarding it are to be coordinated with the Legal Department and designated outside counsel for the Company. Your discussions about it internally should be limited to only those individuals who "need to know" for purposes of thoroughly investigating and responding to the claim. In addition, you should not discuss it with anyone outside the Company, including the plaintiff or any person or entity acting on its behalf, without express authorization from a Company attorney. Any documents that you may create in the course of this litigation at the request of counsel should be clearly labeled "Confidential, Attorney-Client Privilege."

Please call me at (781) 622-1053, or Darla Phillips, our Director of Records Management, at (412) 490-1098, if you have any questions regarding this document preservation notice. Thank you for your immediate attention to this important matter.

Kathi Hartman
Vice President &
Chief Litigation Counsel
Thermo Fisher Scientific

Appendix E - Records Management Policy **Record Retention Document Preservation Notice Request Form**

Date _____	
Requested by: _____	
Print Name _____	Organizational Unit / Group / Division _____
Reason for Suspension Request (check appropriate box and list reason for suspension)	
Business Purpose	<input type="checkbox"/> _____
Legal Purpose	<input type="checkbox"/> _____
Tax Purpose	<input type="checkbox"/> _____
Other	<input type="checkbox"/> _____
Estimated Duration of Suspension: _____	
Description of Affected Records	
Tax Department Recommendation (for tax purpose requests only)	
Not Approved	<input type="checkbox"/> _____
Approved	<input type="checkbox"/> _____
Name: _____	Reason: _____
Signature: _____	Date: _____
Legal Department Approval	
Not Approved	<input type="checkbox"/> _____
Approved	<input type="checkbox"/> _____
Name: _____	Reason (if not approved, notify requesting party): _____
Signature: _____	Date: _____

Appendix F – Records Management Policy Certificate of Compliance

I certify that I have made a good faith effort to implement, manage and ensure compliance with the Thermo Fisher Scientific Records Management Policy in my Organizational Unit, including, but not limited to:

1. Providing assistance to those people in my Organizational Unit concerning questions, comments or issues related to the Policy;
2. Conveying Documentation Preservation Notices to the Legal Department;
3. Transferring inactive Records off-site or to a designated on-site location in accordance with the Policy; and
4. Processing Records Disposal Forms in a manner consistent with the Policy.

Date:

Organizational Unit:

Print Name:

Signed:

Records Manager

Appendix G – Director of Records Management and Records Managers’ Responsibilities

- A. Director of Records Management. The Director of Records Management’s primary responsibilities include:
1. Administering, coordinating, implementing, overseeing and monitoring the hard copy and electronic aspects of the Records Management Policy;
 2. Responding to inquiries and questions regarding the overall Records Management Policy and program;
 3. Developing, coordinating and implementing program monitoring, reviews and audits;
 4. Developing and implementing training programs and other communication methods to help ensure that employees are knowledgeable of, and comply with, the program;
 5. Monitoring and coordinating the activities of the Records Managers and any other individuals delegated compliance responsibilities;
 6. Coordinating with the Legal Department and departmental personnel regarding program issues; and
 7. Assisting the Legal Department with revising the Records Management Policy as necessary due to the needs of the organization or changes in law or policy.
- B. Organizational Unit Records Managers. Organizational Unit Records Managers (“RMs”) shall be appointed in each Business Unit and/or Corporate headquarters departments, and as otherwise designated by the Director of Records Management. Each RM’s responsibilities include:
1. Administering, coordinating, implementing, overseeing and monitoring (pursuant to the direction of the Director of Records Management) the Records Management Policy for the applicable Organizational Unit;
 2. Responding to inquiries and questions regarding the overall program;
 3. Assisting the Director of Records Management to coordinate and implement program monitoring, reviews and audits;
 4. Assisting the Director of Records Management to develop and implement training programs and other communication methods to help ensure that employees are knowledgeable of, and comply with, the Records Management Policy;
 5. Keeping the Director of Records Management informed of all business unit records procedures;
 6. Assisting the Director of Records Management to coordinate with Legal Department and departmental personnel regarding Records Management Policy issues; and
 7. Recommending to the Director of Records Management when revisions to the program are necessary due to the needs of the organization/business unit or changes in law or policy.

Appendix H – Examples of Transient and Official Records

A “record” means anything that has been recorded, regardless of medium or format, including every written, printed, typed, electronic, computer, graphic, or other written material, for example: paper records, emails, PST files/personal folders, backup tapes, voice mail, video/audio tapes, cd’s, pictures, graphs, handwritten notes, drawings, blueprints, databases; data stored on laptops, Blackberries, Palm Pilots, zip drives, flash drives, cell phones, servers, etc.

Distinction between Transient and Official Records

Official Records are records that have importance for the ongoing business activities of the Company and/or that memorialize a business action, transaction, or decision. Official Records should be retained in accordance with the TFS Records Retention Schedule (Appendix A to this Records Management Policy).

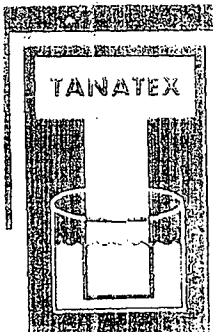
Transient Records include records of short-term value that are not important to the ongoing business activities of the Company.

Transient:

Transient Paper Record Examples:	Transient Email Record Examples:
General correspondence letters	General correspondence emails
Convenience copies of paper documents	Personal emails (family/friends/co-workers)
Drafts of financial statements	Calendar meeting notices
Drafts of contracts	Email acknowledgements
Your copy of your expense account – to balance your AX card statement	Cover emails where the <i>attachment</i> is the Official Record – save the attachment NOT the email
Vendor catalogs	Emails re: seminar advertisements, webinars, vendor solicitations
Vendor brochures	Email surveys/questionnaires
Seminar announcements	Email HR announcements to all
	Email weekly IT announcements, such as weekend availability of the mainframe

Official:

Official Paper Record Examples:	Official Email Record Examples:
Paper records subject to litigation holds	Emails and other electronic records subject to litigation holds
Board of Directors meeting minutes	Emails re: unresolved customer issues
Contracts/Agreements/Licenses	Emails re: backorders (until resolved)
Financial Statements	Emails re: Mergers & Acquisitions until completed
Sales invoices	Emails re: major projects until completed
Purchase orders	Emails re: SOX or PCI compliance
Checks	Emails re: contract amendments, where the amendment is in the body of the email
Vendor invoices	Emails that amend ANY terms to an official agreement, including extension of time
Expense accounts (originals) to A/P	
Engineering drawings/blueprints	
Product warranties, instructions for use, related product manuals	
Personnel files	
Payroll registers	
Thermo Fisher catalogs	
PPI correspondence	
Software license information; activation codes	



TECHNICAL BULLETIN from

TANATEX

The TANATEX CHEMICAL Corporation • BELLEVILLE TURNPIKE • KEARNY, N. J. • WYman 8-0732
Cable Address: Tanlexchem

NEW ADDRESS
EFFECTIVE JULY 1, 1963
PAGE AND SCHUYLER AVES.
LYNDHURST, N. J.

0667-2

TANATERGE® DCP

For Soaping Polyester/Cotton Prints

- Increases light- and wash-fastness by removal of disperse dye stain from cotton
- Increases crock fastness by thorough removal of unfixed surface dyes
- Eliminates staining of grounds by preventing loose dye redeposition
- No effect on shade or color value of printed areas

Clean sharp prints are readily achieved through the use of Tanalid® 004, printing carrier. Soaping polyester/cotton prints with Tanaterge DCP assures full fastness and maintains clean grounds without affecting shade or color value of reactive or disperse dyes used.

PROPERTIES: Tanaterge DCP, a light amber viscous liquid with a mild odor, dissolves readily in warm water (above 130°F.). A 1% solution is clear and has a pH value of approximately 7.

DISSOLVING PROCEDURE: To one part Tanaterge DCP, add three parts warm water (above 130°F.). Mix well. The resulting stock solution is freely soluble in water.

USE: After curing or aging, the bulk of the unfixed reactive dyes, loose disperse dyes, chemicals and gums used in the printing are removed by thorough continuous overflow rinsing with cold water, followed by hot water (160°F.). The prints are then soaped in a continuous washer. A minimum of four soaping compartments containing 5 grams per liter Tanaterge DCP plus 10 g/l soda ash at 185°F. are employed. This is followed by a hot water rinse (160°F.) and finally a cold water rinse (100°F.). Additions of Tanaterge DCP are made periodically using the foam level in the soaping compartment as a guide.

(over)